THE LANCET

Offices: 7, ADAM STREET, ADELPHI, W.C.2.

Telegrams: LANCET, WESTRAND, LONDON. Telephone: TEMPLE BAR 7228 and 7229.

No. IV OF VOL. II., 1931. LONDON, SATURDAY, JULY 25, 1931 Pp. 112—Price 1s.

No. 5630. Vol. CCXXI. Founded 1823. PUBLISHED WEEKLY. Registered as a Newspaper. Annual Subscription: Inland £2 2s. Abroad £2 10s.

OXFORD MEDICAL PUBLICATIONS.

SEE PAGE 2

CANCER OF THE RECTUM.
ITS PATHOLOGY, SYMPTOMATOLOGY AND TREATMENT.
BY W. ERNEST MILES, F.R.C.S., HON. F.A.C.S.,
Surgeon Emeritus (with beds) to the Cancer Hospital; Surgeon to the Gordon Hospital for Diseases of the Rectum, &c.
80 pp. and 33 plates, bound cloth. 7s. 6d. net, post free 7s. 10d.
"It is the best exposition of the subject with which we are acquainted."—BRITISH JOURNAL OF SURGERY.
"Deserves to rank as a classic in the literature dealing with cancer of the rectum."—BULLETIN THE JOHNS HOPKINS HOSP.
"Perhaps no surgeon of to-day has had a greater experience in treating cancer of the rectum."—SURGERY, GYNECOLOGY, AND OBSTETRICS.
Harrison & Sons Ltd., 44, St. Martin's Lane, London, W.C.2.

MODERN METHODS OF TREATMENT
By LOGAN CLENDENING, M.D.
FOURTH EDITION, THOROUGHLY REVISED.
Large octavo. 819 pages, with 95 Illustrations. Cloth. Price 45s. net.
Henry Kimpton, 263, High Holborn, London, W.C.1.

PUBLISHED JULY 22nd.

MOTIVES AND MECHANISMS OF THE MIND
By E. GRAHAM HOWE, M.B., B.S.,
Hon. Phys., Tavistock-square Clinic for Functional Nervous Disorders.
Pp. 280. Demy 8vo. 10s. 6d. net.
FIRST VOLUME OF THE POST-GRADUATE SERIES.
THE LANCET, Ltd., 7, Adam-street, Adelphi, London, W.C.2

FIFTH EDITION. Pp. v+251. With Coloured Plate and 92 other Illustrations. Price 8s. 6d. Postage 6d.
REFRACTION OF THE EYE.
By ERNEST CLARKE, C.V.O., M.D., F.R.C.S.
The simplest book on Refraction, especially written for the General Practitioner.
"Can be recommended to the student as the very best on its subject."—BRITISH MEDICAL JOURNAL.
Baillière, Tindall & Cox, 7 & 8, Henrietta-street, London, W.C.2.

With 25 Illustrations. Demy 8vo. 9s. net; postage 5d.
STERILITY IN WOMEN:
DIAGNOSIS AND TREATMENT.
By SIDNEY FORSDIKE, M.D., B.S. (Lond.), F.R.C.S., Surgeon to the Hospital for Women, Soho Square, London, &c.
"Shows . . . evidence of rich personal experience; will well repay the most careful study."—THE LANCET.
London: H. K. Lewis & Co. Ltd., 136 Gower-street, W.C.1.

THE DIAGNOSIS AND TREATMENT OF BRAIN TUMORS.
By ERNEST SACHS, M.D.
Large octavo. 395 pages, with 217 Original Illustrations and 6 Coloured Plates. Cloth. Price 42s. net.
Henry Kimpton, 263, High Holborn, London, W.C.1.

RESTORATION EXERCISES FOR WOMEN.
By ETTIE A. HORNIBROOK.
With a Foreword by Sir ARTHUR KEITH, F.R.S., M.D., F.R.C.S.
Demy 8vo. Illustrated. 5s. net.
BRITISH MEDICAL JOURNAL.—"The exercises described and recommended are likely to be beneficial. The dietary for constipated persons should also be useful."
Wm. Heinemann (Medical Books) Ltd., 99, Great Russell-street, London, W.C.1.

SAUNDERS'
IMPORTANT
BOOKS.
See Saunders' Advertisement on Page 5.

THE THOMAS SPLINT AND ITS MODIFICATIONS IN THE TREATMENT OF FRACTURES.
By MEURICE SINCLAIR, C.M.G., M.B., CH.B. (EDIN.).
Pp. 152. 85 Illus., with X-Ray Photographs, 3 Charts. 15s. net.
Oxford University Press, Amen House, London, E.C.4.

GASTRIC ACIDITY.
By J. D. ROBERTSON, M.D.,
AN HISTORICAL AND EXPERIMENTAL STUDY.
With Diagrams, 5s. net.
Published for the Middlesex Hospital Press by John Murray, 50, Albemarle-street, London, W.1.

THE TONSILS AND ADENOIDS
AND THEIR DISEASES: INCLUDING THE PART THEY PLAY IN SYSTEMIC DISEASES.
By IRWIN MOORE, M.B., C.M.
Demy 8vo. 395 pp. 107 Illustrations. Price 21s. net.
"On any question regarding tonsils and adenoids, this exhaustive work by Dr. Irwin Moore must be regarded as the final authority for many a long day to come."—PRACTITIONER.
"Provides an admirable guide, reliable and up to date, on the subject dealt with."—MEDICAL TIMES.
"Should be in the library of the medical student, general practitioner and the consultant."—MEDICAL WORLD.
Wm. Heinemann (Medical Books), Ltd., 99, Great Russell-street, London, W.C.1.

A TEXTBOOK OF PATHOLOGY
Edited by E. T. BELL, M.D.
Royal octavo. 627 pages, with 316 Illustrations and 2 Coloured Plates. Cloth. Price 36s. net.
"An attractive book and certain to take its place."—B.M.J.
Henry Kimpton, 263, High Holborn, London, W.C.1.

OESOPHAGEAL OBSTRUCTION:
ITS PATHOLOGY, DIAGNOSIS AND TREATMENT
(including four chapters on Cancer of the Œsophagus).
By A. LAWRENCE ABEL, M.S. Lond., F.R.C.S. Eng.,
Assistant Surgeon to the Cancer Hospital, &c.
Pp. 245. 132 Illustrations. 2 Col. Plates. 30s. net.
"Masterful and complete. . . . Cannot be too highly praised."
—SURG. GYN. AND OBSTET. JOUR.
Oxford University Press, Amen House, London, E.C.4.

TO ADVERTISERS

THE MANAGER WISHES TO ANNOUNCE THAT

THE STUDENTS' NUMBER OF THE LANCET

FOR THE MEDICAL SESSION 1931-1932

WILL BE ISSUED ON FRIDAY, AUGUST 28th.

Advertisements should be forwarded to the Office, 7, Adam Street, Adelphi, London, W.C.2

ANTI-TYPHOID-PARATYPHOID (T.A.B.) ORAL VACCINE.

Administration of this protective vaccine by mouth is now an established alternative to the usual hypodermic method for immunisation against the enteric diseases and has the advantage of avoiding all reaction.

This method is especially indicated where rapid immunisation is desired, as in the case of contacts; or when facilities for hypodermic injection are lacking.

Issued in packages containing three doses of killed emulsion, with three bile tablets for oral administration on three successive mornings. Full instructions accompany the package. Price **17/6** per set.

Prepared under Licence from the Ministry of Health in the

LABORATORIES OF PATHOLOGY & PUBLIC HEALTH,

Telephone: LANGHAM 1433. 6, HARLEY STREET, LONDON, W.1.

"The Standard."

For a really reliable strapping see that you get ZŌPLA

It is British. It is always of the same high quality.
It has a powerful grip. It does not irritate.
It keeps well. It is supplied on various cloths and felts.

Each spool packed in a tin which keeps plaster in perfect condition. Sample on request.

LESLIES LTD., Medical Plaster Manufacturers,
High Street, Walthamstow, LONDON, E.17

THE FRENCH NATURAL MINERAL WATER

VICHY-CÉLESTINS

And the other State Springs of Vichy
(Property of the FRENCH STATE).

¶ This Natural Alkaline Mineral Water may be prescribed with absolute confidence with regard to its purity and natural condition. It is bottled at the Springs under the most careful supervision, and to ensure fresh supplies is imported with regular frequency.

¶ The VICHY WATERS, being almost devoid of Sulphates, are most agreeable to the taste, and are daily relied upon by Physicians the world over in the treatment of Gout and Rheumatism and for Affections of the Liver, Stomach, etc.

NATURAL VICHY SALTS for Drinking and Baths.
VICHY DIGESTIVE PASTILLES prepared with Natural Vichy Salts.

CAUTION.—Each bottle from the STATE SPRINGS bears a neck label with the word "VICHY-ÉTAT" and the name of the SOLE AGENTS:—

INGRAM & ROYLE, Limited,
Bangor Wharf, 45, Belvedere Road - - - London, S.E.1.
And at LIVERPOOL and BRISTOL.
Samples free to Members of the Medical Profession.

THE LANCET

A JOURNAL OF BRITISH AND FOREIGN MEDICINE, SURGERY, OBSTETRICS, PHYSIOLOGY, CHEMISTRY, PHARMACOLOGY, PUBLIC HEALTH, AND NEWS.

No. 5630. LONDON, SATURDAY, JULY 25, 1931. CCXXI.

CONTENTS

THE WHOLE OF THE LITERARY MATTER IN THE LANCET IS COPYRIGHT.

ADDRESSES AND ORIGINAL ARTICLES.

Public Health—To-day and To-morrow - By W. G. WILLOUGHBY, D.P.H. .. 171
Gastro-Photography. By Prof. CHARLES A. PANNETT, F.R.C.S., and DAVID LEVI, F.R.C.S.—*(Illustrated)* 174
Some Results Obtained with the Gastro-Photor. By STANLEY WYARD, M.R.C.P.—*(Illustrated)*.. 177
Complete and Partial Heart-Block During an Attack of Rheumatic Fever. By MAURICE CAMPBELL, F.R.C.P.—*(Illustrated)* . 180

CLINICAL AND LABORATORY NOTES.

Aplastic Anæmia: Sequel to a Case Report. By A. G. GIBSON, F.R.C.P. 181
Treatment of Habitual Abortion with Wheat-Germ Oil (Vitamin E). By P. VOGT-MÖLLER, M.D. 182
A Case of Xerostoma and Xerophthalmus. By JAMES L. O. TILLEY, M.R.C.S., L.D.S. 183

REVIEWS AND NOTICES OF BOOKS

The Histopathology of Skin Diseases. By Prof. Lee McCarthy, M.D..... 191
Backache. By James Mennell, M.D. 191
Hay-Fever, Hay-Asthma. Its Causes, Diagnosis, and Treatment. By William Lloyd, F.R.C.S. 191
A Text-book of Surgery. By John Homans, M.D. 192
Trial of Alfred Arthur Rouse. Edited by Helena Normanton, Barrister-at-Law 192
The Physical and Radiological Examination of the Lungs. By James Crocket, D.P.H., F.R.C.P.E. 192

NEW INVENTIONS.

Spirit-Proof Case. By ALFRED WALFORD, F.R.C.S.—*(Illustrated)*.. 184

LEADING ARTICLES

VACCINE PROPHYLAXIS IN PNEUMONIA 193
THE MEDICAL OFFICER OF HEALTH: PAST, PRESENT, AND FUTURE.. 194
NUTRITIONAL ANÆMIA IN INFANCY 195

ANNOTATIONS.

Narcotic Drugs: A New Convention..... 196
The Care of the Deaf 196
Medical Education in Russia 197
Electrical Apparatus and Accidents..... 197
Carcinogenesis with Dibenzanthracene 197
The Laboratory Diagnosis of Malaria 198
Staphylococcal Infection of the Nose and Lip 198
Evolutionary Tendencies in Teeth and Jaws.... 199
Measurements for Jaeger's Test Types.... 199
The Epidemiology of Trachoma 199
Sulphur Treatment of G.P.I. 200
Avertin and Cerebro-spinal Fluid 200

SPECIAL ARTICLES.

An Investigation into Maternal Mortality and Morbidity in the Domiciliary Services of Maternity Hospitals. By Prof. J. M. MUNRO KERR, F.C.O.G., and ALBERT SHARMAN, M.B. 201
British Medical Association: Annual Meeting in Eastbourne: Proceedings of the Representative Body.—*(To be continued)* 185
Medicine and the Law: Industrial Disease Compensation: a Delayed Claim.—B.M.A. Action against Drug Stores.... 190
Imperial Social Hygiene Congress: Choice of Remedies in Syphilis.—Methods and Results of Dealing with Antenatal Venereal Diseases.—The Elsie Inglis Memorial Hospital 204
The British Empire Cancer Campaign: The Year's Progress 207
The British Pharmaceutical Conference 208

PANEL AND CONTRACT PRACTICE.

Effect of Dangerous Drugs Restriction.—Excessive Sickness Claims 209

CORRESPONDENCE.

Priority in Neurological Surgery (Mr. Donald Armour) 210
Acute Aseptic Meningitis (Dr. W. A. Lister)..... 210
Latent Maxillary Sinusitis (Dr. A. H. Douthwaite, Dr. Philip Ellman) 211
A Case of Iodism? (Dr. Kathleen Blake) 211
Insulin Phosphotungstate by Mouth (Dr. Harold H. Sanguinetti) 212
Rectal Hæmorrhage in Unsuspected Typhoid (Mr. G. S. Woodman) .. 212
Recovery from Streptococcal Septicæmia (Dr. A. H. G. Burton)..... 212
Bacteriological Control of Milk-supplies (Mr. Joseph Race) 213
Tuberculous Bacillæmia (Dr. Kenneth Eckenstein) .. 213

PARLIAMENT.

Notes on Current Topics: Housing in Rural Areas.—Bethlem Hospital Bill.—Sterilisation of Mental Defectives..... 216
House of Commons: Education of Mentally Defective Children.—Reception Hospitals for Mental Patients.—New Serum for Puerperal Fever.—A Treatment for Tuberculosis.—Lead Poisoning.—Meningitis in the Army 217

OBITUARY.

Francis Richardson Cross, F.R.C.S.—*(With portrait)* 218

INDEX NOTICE.

THE LANCET, Vol. I., 1931 200

PUBLIC HEALTH SERVICES.

Local Authorities and Advice on Birth Control 214
School Medical Service: County of Warwick.—County of Brecon.—County of Rutland 214
Infectious Disease in England and Wales 215

THE SERVICES.

Royal Naval Medical Service.—Royal Army Medical Corps.—Army Dental Corps.—Indian Medical Service.—Royal Air Force 219

MEDICAL NEWS.

University of Oxford 218
University of Cambridge.. 218
Royal Faculty of Physicians and Surgeons of Glasgow 218
University of London 218
University of Durham.... 219
University of Liverpool.. 219
University of Leeds 219
London Hospital: Annual Report 173
Enlargement of Arbroath Infirmary 189
Compulsory Vaccination .. 190
Opening of King George Hospital, Ilford 213
Stanmore Obelisk..... 224
Course on Circulatory Disorders 219
St. Bartholomew's Hospital and College 219
The late Dr. C. A. Porter 219
International Union against Tuberculosis..... 219
Fellowship of Medicine and Post-Graduate Medical Association..... 219

NOTES, COMMENTS, AND ABSTRACTS.

Mental Inefficiency and Adolescent Crime. By W. NORWOOD EAST, M.R.C.P.—*(Concluded)*.. 221
Medical Education in the Sudan 224
Tobacco Tolerance in Fish 224
A Patient's Views on Tuberculosis 224

Medical Diary 219
Appointments 220
Vacancies 220
Births, Marriages, Deaths 220

THE LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY LIMITED

(FOUNDED 1892)

Registered Office: VICTORY HOUSE, LEICESTER SQUARE, W.C.2.

Telegrams: "MEDICAVERO, WESTRAND, LONDON." *Telephone:* GERRARD 4814.

President: Sir JOHN ROSE BRADFORD, Bart., K.C.M.G., C.B., C.B.E., M.D., F.R.C.P., F.R.S.
Treasurer and Chairman of Council: C. M. FEGEN, M.R.C.S., L.R.C.P., D.P.H.
Trustees for the Reserve Fund:
Rt. Hon. LORD DAWSON, P.C., G.C.V.O., K.C.B., M.D., P.R.C.P. Sir JOHN ROSE BRADFORD, Bart., K.C.M.G., C.B., C.B.E., M.D., F.R.C.P., F.R.S. Sir HARRY BALDWIN, C.V.O., M.R.C.S., L.D.S.

The Society was founded for the following purposes: To protect, support, and safeguard the character and interests of legally qualified Medical and Dental Practitioners; to advise and assist Members of the Society in matters affecting their professional character and interests; and to indemnify them in regard to actions, etc., undertaken on their behalf.

SUBSCRIPTIONS:—There is an entrance fee of 10s., and an Annual Subscription of £1.

The Invested Funds of the Society exceed £47,500. The Society is fully insured to an unlimited extent against all adverse costs and damages which may be awarded against Members in any action which the Society undertakes on their behalf.

Forms of application for Membership and full particulars may be obtained from the Secretaries at the above address.

OXFORD MEDICAL PUBLICATIONS

JUST PUBLISHED.

A new (Fourth) Edition of

THE DIAGNOSIS & TREATMENT OF VENEREAL DISEASES IN GENERAL PRACTICE

The Routine Management of Syphilis and Gonorrhœa employed in the St. Thomas's Hospital Venereal Diseases Department.

By **L. W. HARRISON,** D.S.O., M.B., Ch.B., F.R.C.P.E., Brevet Colonel R.A.M.C. and K.H.P. (Ret.),

Director of Venereal Department, St. Thomas's Hospital; formerly Lecturer in Venereal Diseases, Military Hospital, Rochester Row.

With a Chapter on THE MEDICO-LEGAL ASPECTS, Etc., by **F. G. CROOKSHANK,** M.D., F.R.C.P., &c.

Contents include:—Equipment Required for the Diagnosis and Treatment of Venereal Diseases—The Examination of the Patient—General Characteristics of Gonococcal, Syphilitic and other Venereal Affections—Lesions of the Penis—Gonorrhœa—Syphilitic and Non-syphilitic Sores and Erosions—Papillomata—The Scrotum and its Contents, the Inguinal Region, Anus, and Rectum—The Trunk and Limbs—Syphilitic Affections of the Skin—Subcutaneous Tissues, Muscles, Bones, Joints, Tendons, and Bursæ—The Hands and Feet—The Head and Neck—The Thoracic and Abdominal Viscera, and the Vessels—Syphilis of the Central Nervous System—Cerebral Lesions—General Paralysis—Diagnosis of Cerebral Syphilis—Syphilitic Affections of the Spinal Cord and its Membranes, and of Peripheral Nerves—The Venereal Diseases of Women—Gonococcal and Syphilitic Affections of Infants and Children—The Taking of Specimens for Laboratory Examination—The Examination of Specimens by the Dark-ground and other Microscopical Methods—The Interpretation of Laboratory Reports—The Treatment of Gonorrhœa—Abortive Treatment in Males—General Measures—Local Treatment of Gonorrhœa—Balanitis, Papillomata, and Chancroid—The Treatment of Syphilis—The Prevention of Venereal Diseases—The Medico-Legal Relations of Venereal Disease (by F. G. Crookshank, M.D. Lond., F.R.C.P.)—Instruments and Appliances commonly Used in the Diagnosis and Treatment of Venereal Diseases—Stains Used for the Demonstration of Micro-organisms—Sketch of the Principles of the Complement-Fixation Test of Microbial Infection—The Wassermann and other Serum Tests for Syphilis—Lange's Gold and other Colloidal Tests of Cerebro-Spinal Fluid.

Pp. 582. 79 Illustrations, 16 Colour Plates, 3 Black-and-White. **25s.** net.

THE SCIENCE AND PRACTICE OF DENTAL SURGERY

Edited by **Sir NORMAN BENNETT,** M.A., M.B., B.Ch. (Cantab.), L.D.S. (Eng.),

Consulting Dental Surgeon to St. George's Hospital and the Royal Dental Hospital, London; Lecturer in Orthodontics and Director of Orthodontic Teaching, Royal Dental Hospital, London; Late Member of the Board of Examiners in Dental Surgery, Royal College of Surgeons of England; Examiner in Dental Surgery, University of London.

Second Edition.

Complete in Two Volumes, Royal 8vo ($10'' \times 6\frac{1}{4}''$), comprising 1,598 pages, with 1,230 Illustrations in the text. **£4 4s.** net.

As the scope of this very important publication is too extensive to be given adequate description in a brief announcement, we have prepared a special 16 pp. prospectus which gives the fullest particulars with specimen pages and illustrations. A copy of this prospectus will be sent on request.

COMPLETE CATALOGUE SENT ON REQUEST.

Oxford University Press

HUMPHREY MILFORD, **Amen House, Warwick Square, London, E.C.4.**

Telephone: CITY 2604. *Telegrams:* FROWDE, CENT., LONDON.

ADDRESSES AND ORIGINAL ARTICLES

PUBLIC HEALTH—TO-DAY AND TO-MORROW.*

By W. G. Willoughby, M.D. Lond., D.P.H. Camb.,
MEDICAL OFFICER OF HEALTH FOR EASTBOURNE; PRESIDENT OF THE BRITISH MEDICAL ASSOCIATION.

This is the first occasion on which a full-time medical officer of health has held the position of president of the British Medical Association, but preventive medicine has formed from time immemorial an important part of the work of every branch of the profession. The existence of the medical officer of health and of the public health service is due to a very great extent to the fact that at all times members of the profession have observed and recorded the direct and contributory causes of disease, and have studied how disease generally, and diseases in particular, can be prevented. The Ministry of Health and medical officers of health are systematically applying and extending the results of these observations and records.

As regards the past, I will only briefly remind you of such evidence of progress as the increase in the expectation of duration of life, the decrease in the general death-rate, and in the infant mortality-rate, the disappearance or lessened occurrence of some diseases, the mitigation of the severity of many others, the wholesale advance in the skill, technique, and safety of surgery, and the improved provision for the care and prevention of sickness. The most casual observation shows the great improvement that has occurred. In spite of abundant evidence of progress, however, it is not possible to be satisfied with the position of the general health to-day.

Public Health To-day.

The medical officer of health regularly receives from the registrar of births and deaths copies of all certificates of deaths, and also receives notifications of certain illnesses—so far a definite and generally accurate summary of those events in his district. He knows the extent to which ailments are affecting elementary and some other school-children, and persons who attend certain clinics. He also has less definite, but abundant, information as to other illnesses that are occurring in his district. It is his duty to act in connexion with this constantly recurring mass of information, and his consequent sense of responsibility has sometimes rendered the medical officer of health in his plans for improvement vulnerable in the eyes of general practitioners to the charge of removing his neighbour's landmark. Such concentrated and depressing information is not so constantly before those members of the profession who are dealing for the most part with individual patients.

The medical officer of health has also to study the mass of statistical information supplied to him weekly, quarterly, and annually by the Registrar-General, and this also makes a conscientious officer more restive. Without going into many figures from these and other statistics, there are some facts to which I wish to draw attention that indicate very clearly how much room there is for improvement in the public health.

The annual statistical summary of the Registrar-General for England and Wales demonstrates that there are far too many deaths at early ages. The *expectation of life*, according to the Registrar-General's last life-table, is still only 55 years for males and 59 years for females, and though the vitality of the nation has been steadily improving generally, the life-tables show almost no change at the ages of adolescence; from 30 years onwards there is but a slight increase in vitality, while at 50 the increase in expectation of life is only about two years. At advanced ages the progress is even less. In fact, the greatest part of the increase is due to the reduction of infantile mortality after the first week of life.

We are still on an average far short of the 70 years of the Psalmist. We are also faced with the position that his pessimistic description of the age-group 70 to 80 of his time applies far too truthfully to many of the years short of 70 in a great proportion of our population of the present day.

Illness and Physical Defect in Early Childhood.—An increase in the expectation of life is worse than useless unless the life so prolonged is healthy enough to be enjoyed; sickness makes it too often a doubtful blessing. The large amount of illness which must have occurred coincidently with 40,000 deaths in one year of young children who escaped the risks of infancy, while serious in itself, must also have been a leading cause of the indifferent health and permanent physical defects of so many of the survivors in their later years. Damage-rate is more important to the survivors than death-rate. Of elementary school-children an average of 8 to 10 per cent. are unfit to attend school owing to illness, and 1 in 5 of those attending has some physical defect. It is noteworthy that the children arriving at school at the age of five are already affected; the percentage of ailments is substantially diminished before they leave. Much of the neglect of defect at the pre-school age cannot be overcome, and will still have its injurious effect when the children become adults. A few years ago I made an investigation into the history of 504 mentally retarded children of this district who were not mentally deficient. The apparent causes were multiple in most instances, but early ill-health was the definite cause of the retardation in 47 per cent. of the cases, and a contributory cause in most of the others.

Health of Young Adult Population.—As examples of the unsatisfactory position to-day of the general health, early deaths and sickness in early life stand out prominently; other examples are the vast amount of sickness shown by national health insurance reports, and the wholesale rejection of young adults who have tried to enter the Navy, Army, and Air Force Services. During the war only 36 per cent. of would-be recruits between the ages of 18 and 42 qualified for active service. This unsatisfactory position still obtains. To a question in the House of Commons last year the Secretary of State for War replied that in 1929 5 per cent. were rejected for diseases of the middle ear, and over 4 per cent. for diseases of the heart. Defects of the lower extremities, dental defect, defects of vision, and insufficient weight caused rejections in each case of 2 to 3 per cent. The defects too frequently pointed to some illness or neglect in early childhood. The only marked improvements compared with the figures of 1910 were in dental condition and chest measurements.

As regards the sickness statistics connected with National Health Insurance, in any year an average

* Abridged from the presidential address delivered before the British Medical Association at Eastbourne on July 21st.

of about half the insured population comes under treatment by insurance medical practitioners. The claims for sickness and disablement benefit have increased continuously, and have practically doubled in recent years.

These are only some few examples of the state of the public health. Other examples include the multiplicity of hospitals, and the enormous sale of patent medicines.

The Future.

In considering the outlook for the future the nature and constitution of the public whose health is to be improved is of primary importance. Owing to the reduction in the birth- and death-rates we now have to deal with an increasingly older population than in the past. This is due mainly to the decrease in the number of young people, for the life of the older generations is being prolonged but slightly. The average age in England and Wales at the 1921 census was 30·6 (males 29·9 and females 31·2). Ten years previously it was two years less, and in 1891 four years less. Corresponding figures for the 1931 census are not yet available in detail, but it is obvious that the change is now even more marked.

As the population becomes older the prospect of a further reduction in the death-rate becomes less and less.

REDUCTION OF THE BIRTH-RATE.

The constitution of the population is altering also through the nature of the reduction of the birth-rate. If careful, scientific, and eugenic birth control were possible, a healthier type might be evolved. What is actually occurring, however, is a greater proportionate reduction in the number of births among the better types of the race than among the less satisfactory. This results in a mental and physical disadvantage to the race as a whole.

Recent reports of the Board of Control show that the proportion of mental defectives in the population has increased approximately from 4 to 8 per 1000 in 25 years, and this fact is only partly explained by such reasons as better ascertainment and notification of the mental defective. Birth control is at its minimum among these people, and they seem especially fertile. Although it is sometimes asserted that heredity accounts directly for a relatively small proportion of mental defectives there is also indirect influence. In my own limited experience of such cases the parents are mentally defective in about 14 per cent., and on the borderline in another 16 per cent. or more. The descendants of these people, if the direct influence of heredity is escaped, are often permanently damaged mentally and physically by the consequent evil environment of their early life. Persons with a tendency to mental defect react very readily to environment, the mental defective being usually amoral rather than immoral.

If the present course of birth reduction continues, as it probably will do, we are nearing the time when the already diminishing natural increase of the population —that is, excess of births over deaths—will disappear entirely. The annual rate of increase by excess of births over deaths per 1000 living, which was over 14 50 years ago, and about 12 at the end of the last century, in 1928 was 5, and in 1929, 2·9. In the present difficult circumstances this may be satisfactory, but in venturing rightly or wrongly to interfere with the course of nature by birth control it is certainly essential to take care that in reducing the quantity of our available supply for the future of the race, we at all events endeavour to preserve the quality of the remainder.

FACTORS UNFAVOURABLE AND FAVOURABLE.

An alteration in the constitution of the population connected with the great decrease in infantile mortality has been caused by the survival of a large number of children who would otherwise have died. A selection depending on ignorance and neglect, however, is not a natural selection, but a very artificial one. Moreover, the enlightened preventive treatment which has resulted in so much saving of infant life has necessarily brought up the standard of life of infants generally.

Accidental deaths occurring in dangerous occupations, the migration of good types of individuals to other countries, unemployment, the development of unfavourable habits largely connected with diet, liquid and solid, are among the factors which affect the public health adversely. On the other hand, the good effects of education are to be seen in the improved condition of the elementary school-children, the increased importance attributed to physical training and open-air life, and the improvement of sanitation and housing conditions among the population as a whole. If the lay press, with its enormous circulation, would reproduce in popular form such definite facts as are to be found in the reports of the Ministry of Health and of the Medical Research Council, the progress would be more rapid. Sensational accounts of so-called cures for such diseases as cancer and tuberculosis do real harm. The hopelessly contradictory nature of advice so freely given as to eating and drinking prevents much notice being taken of it.

The Medical Profession and Public Health.

As regards the influence of our own profession on the future of the public health, we can be optimistic. Medical practitioners, in accordance with their traditions of progress, are taking an increasing interest and a greater part in preventive medicine than at any previous period. Thanks to the work of our Association, the spirit of friendly coöperation between the branches of the profession has steadily grown, and artificial barriers have been removed. In recent years there has existed a small committee of eminent and representative leaders of the profession to confer with the Ministry of Health on public health matters should occasion arise. General practitioners and medical officers of health coöperate in their work more and more as years go on. In this county borough, as in many others, there are quite a number of practitioners who, in addition to the preventive work carried on in the course of their own private practices, are giving valuable assistance in the public health service.

In its early days the public health service and the activities of the medical officer of health were almost entirely confined to the environmental circumstances of disease, a few infectious illnesses, and the application of discoveries that had been made in connexion with such essentials as pure air, pure water, and pure food. These duties of the medical officer of health are as important as they ever were, but new obligations have brought him into constant touch with members of the public as suffering individuals. This has arisen very largely from the number of persons, especially children, found to be suffering from defect, who for various reasons, especially want of means, received very little, if any, medical attention. It was found impossible to adhere to the principle that our duty should end when we had directed the sufferer or his guardians that the necessary medical services should be obtained, for though the advantages of the agency of the general practitioner for carrying

out treatment were obvious, this was frequently not available.

The original allocation of large clinics in connexion with the public health service to men and women not long from their training schools was due to the obvious necessity for organisation and freedom from other calls on their time. These points could be secured with full-time clinic officers, but could not be obtained from those in practice. Though the preventive work of the general practitioner is by no means dependent on any work he may carry out in State clinics, modifications which enable him to take part in the treatment of patients in the State clinics are so clearly advantageous that there are signs of this coöperation being more developed in the future. On the one hand, the patients themselves are entitled to the benefit of his varied experience if this can be arranged, and on the other, the experience to be obtained from these clinics would be most valuable to him in his other work. The clinics, which have been an important factor in the improvement of the public health, would be even more useful if they could be coördinated with an increased general practitioner service in the homes of those not in a position to obtain that service at the present time. Early tendencies require skilled guidance, and environment requires skilled supervision; if these could be secured in the home, clinics for treatment would be less necessary.

It is essential that all ill-health should receive attention, and the B.M.A. scheme to extend facilities for treatment beyond the present insured persons is therefore of the utmost importance, and should receive careful consideration. The alternatives to a scheme on these general lines are either that nothing should be done for many sick people—and this is unthinkable—or that the arrangement of medical services should be made by laymen, and this would be most unsatisfactory for both the public and ourselves. It has been truly pointed out that if the best results are to be obtained it is important that in any form of clinic, contract, or insurance practice the relation between doctor and patient should remain as nearly as possible similar to that in ordinary practice.

While efficient diagnosis and treatment will always remain essential parts of preventive medicine, the improved arrangements now made for extending teaching in the subject of public health at the medical schools are extremely important. The General Medical Council has ordained that courses of instruction in forensic medicine, hygiene, and public health should be taken concurrently with the later stages of clinical instruction, and is still considering details. Public health has hitherto been a subject very detached from the other subjects of the curriculum. This arose from the also very detached nature of the original work of medical officers of health. As far as I am aware, the teaching of the subject of public health to students of medicine has reached its greatest elaboration in the McGill University. In the curriculum of this university the course of public health and preventive medicine has been divided so that in future a portion will be taken in each of the five years of the general course, and brought into close relation with the other work of the medical student in the corresponding year.

POST-GRADUATE STUDY.—AUXILIARY SERVICES.

In connexion with education, the facilities for post-graduate study are rapidly increasing. I would suggest that some simple extended opportunities could be made as a supplement to the present work and to the important scheme which is now in course of development. The work of the general practitioner is very largely concerned with minor ailments of children, maternity and child welfare, tuberculosis, and venereal diseases. There are clinics for these in abundance all over the country, and many more of them could be made available for instructive conference and consultation. The closer coördination of research work with clinical practice is essential.

The want of general application of existing knowledge is one of the many reasons for consideration of the scheme for extending the present limited opportunities of the medical practitioner to get into the homes for early advice and treatment. Since the study of physiology is an important part of the doctor's training, and needs special application to the individual from the time of birth, and before, I wonder if so much abandonment of so-called normal midwifery by the general practitioner is advisable. The only capable judge as to what is normal or abnormal in the working of the human mechanism must essentially have a good knowledge of physiology. The death returns show that the first week is the most dangerous period of human existence, and it must be beneficial to have the advantage of the doctor's knowledge from the earliest start of life.

An important indication of progress is the attention that is being given to bringing auxiliary medical services within the reach of an increasing number of the population. This is particularly the case with regard to consultant and specialist services. One of the latest of these is a scheme to make the valuable aid of pathological examinations available for those of moderate means. These developments are largely due to the activity of our Association, whose schemes also for the extension of medical services generally, and for improved midwifery services and hospital arrangements, require earnest consideration in connexion with the future of the public health.

It is necessary that members of the medical profession should take a leading part in the consideration of social conditions and ameliorative measures, for any matter that may affect the health must concern the profession. The presence of medical men and women in Parliament, on local government bodies, and in associations and societies that have any bearing on the subject of public health is therefore most advisable.

One of the methods, and not the least important one, of attaining the end we have in view—namely, the better health of the community—is by meetings such as the annual meeting of the British Medical Association, with its numerous scientific sections and social opportunities for interchange of knowledge and for debating the means of increasing and applying it.

LONDON HOSPITAL: ANNUAL REPORT.—Last year in-patients increased from 13,347 to 13,613, but the number of out-patients fell from 89,972 to 86,554. The fall is explained by the new arrangements made with the London County Council for the treatment of venereal diseases cases and to the greater use made at the instance of the house committee of the panel treatment of minor and trivial cases. The accounts show a deficit of £22,932, which would have been greater but for savings made by the general fall in the prices of provisions. Subscriptions and donations fell by £6525, but the Hospital Saving Association increased its contribution by nearly £2000. More than a quarter of the in-patients were members of the association, while nearly three-quarters of the total number of patients contributed, directly or indirectly, towards the cost of their treatment and maintenance. The amount so provided was £52,748, representing approximately 25·50 per cent. of the total income. The average cost per week and per inmate was £5 10*s.* 3*d.* and £14 0*s.* 5*d.*

GASTRO-PHOTOGRAPHY.

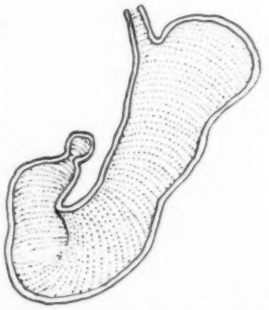
BY CHARLES A. PANNETT, M.D. LOND., F.R.C.S. ENG.,
SURGEON TO ST. MARY'S HOSPITAL; PROFESSOR OF SURGERY IN THE UNIVERSITY OF LONDON;
AND
DAVID LEVI, M.S. LOND., F.R.C.S. ENG.,
SURGEON TO THE INFANTS HOSPITAL, VINCENT-SQUARE; DEMONSTRATOR OF ANATOMY, ST. MARY'S HOSPITAL MEDICAL SCHOOL.

DIRECT inspection of the interior of the stomach by means of the gastroscope, as a generally applicable clinical method, would seem to be an unattainable ideal. With such instruments as we possess gastroscopy can never become a routine procedure. In many individuals it is associated with an unjustifiable risk. The difficulties to be overcome to make it safe are so apparently insuperable that it is no wonder that efforts have been diverted to the problem of obtaining a photographic image in substitute. Yet this itself has raised questions of extraordinary complexity, and only quite recently has a certain measure of success been achieved by the inventive genius of F. G. Back, an Austrian engineer, working in Prof. Wenckebach's clinic in Vienna, with Prof. Otto Porges and Dr. J. Heilpern. An instrument has been made which will, under conditions, give images of a large part of the stomach and the use of which is as free from danger as the passage of an ordinary stomach-tube. The gastro-photor, as the instrument is called, is a magnificent example of the application of the resources of science to a difficult and intricate problem. The object of this communication is to examine critically the possibilities of the device in clinical medicine.

Some Fundamental Properties of the Apparatus.

To carry out any useful investigation with the gastrophotor it is essential to have an understanding of the essential principles of the apparatus and its physical possibilities. Its description has already appeared in several publications.[1] It suffices to say here that in its latest form it consists of two groups of four stereoscopic pinhole flashlight cameras, in each of which individual cameras face directions at right angles to each other, whilst being in the same horizontal plane. The two components of each stereoscopic camera are placed one vertically above the other. The angle of vision of each camera is so wide that it is possible to obtain images comprising the whole circumference of an enveloping container over a zone whose vertical width will depend upon the distance of its inner wall from the camera. The horizontal groups of cameras are placed with the nearest pinholes 30 mm. vertically apart, so that the two vertical zones also overlap unless the containing walls are very close to the pinholes. The images on the films are only 5 mm. in diameter, the enlarged prints from them have a diameter of 7·5 cm. But so brilliant is the flash and so sensitive the fine grained emulsion of the film, that it is possible to obtain prints of the definition shown in Fig. 1. However, the definition of the image depends to some extent upon the distance of the object from the pinhole. It falls off with increasing distance. The angle of the vision of the camera being so wide it naturally follows that the image of any particular object shrinks very quickly as it recedes from the pinhole, a fact necessary to keep prominently in mind in the interpretation of photographs. The intensity of the flash has been arranged to give a good exposure at the average distance the stomach walls must be away from the pinholes to give pictures of a size which can be read and deciphered easily. It can be readily discerned how unfavourably the law of inverse squares acts in the case of the more distant areas of the stomach, which, unfortunately, often comprise just those areas the clinician would wish to inspect. Not only is definition poor and the image excessively small.

FIG. 2.



To show the shape of the air-distended stomach and how the antrum turns backwards at an angle to the general direction of the rest of the stomach.

FIGS. 1 5 6.

Photograph of the anterior wall of the stomach to show the definition which can be obtained with the gastric camera.

Lower antral picture of the cast.

Lower ventral picture of the cast.

[1] Heilpern, J., and Porges, O.: Klin. Woch., 1930, ix., 15; THE LANCET, 1931, i., 1371; Presse Méd., 1931, No. 31, p. 577.

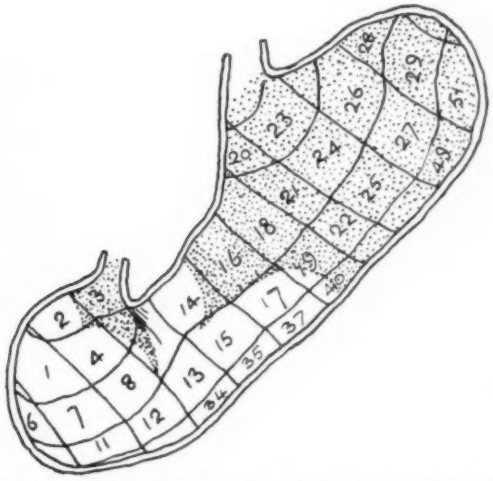
but the illumination is nothing like the optimum to give the correct photographic exposure.

When the camera is placed properly in the stomach the pinholes of each group of cameras look forwards, backwards, to left and to right. The images obtained are described as upper or lower ventral, upper or lower dorsal, upper or lower fundal, and upper or lower antral.

FIG. 3.

Photograph of the posterior half of the model of the stomach with the camera in position.

FIG 4.



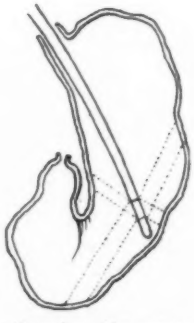
Depicts the area of the cast (dotted) which was not shown in the films when the camera was placed as in Fig. 3.

Suitability of the Camera for Photographing the Stomach.

The shape of the stomach differs very considerably in different people, as shown by X ray examination after the ingestion of an opaque meal. But the shapes thus revealed do not correspond with the air-inflated viscus which is photographed. The stomach, distended with air, approximates more to the shape of the organ described in the older anatomy books. In general it is to be considered as consisting of a large reservoir lying vertically or diagonally in the coronal plane of the body with a smaller antral portion which, as a rule, tends to turn backwards towards the spinal column (Fig. 2). The œsophagus passing into the stomach bears a little to the left, but a tube entering the cardiac aperture tends to be rather close to the lesser curvature. This can be seen very clearly in X ray photographs of the inflated stomach taken with the tube in position. In the diagrams (Figs. 7 and 8) it is seen that the camera cannot possibly give an image of that part of the lesser curvature, near the pylorus, and that in such a case the pylorus itself is not visible. This is one of the drawbacks of the apparatus; in but few cases can the pylorus and the whole of the lesser curvature be photographed.

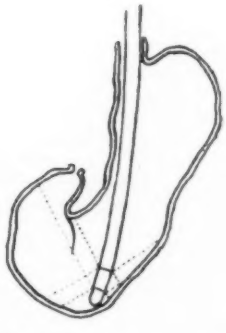
To get some idea of the general field of view covered a cast of an inflated stomach was taken. A mould prepared from this was split into anterior and posterior halves. The inner surface was then marked out into square inches, which were numbered. The camera was used to photograph the inside of the model. Fig. 3 is a photograph taken with the ordinary camera of the posterior half of the model with the telescopic camera in position. Fig. 4 is a drawing the shaded areas of which are those parts of the stomach of which images could not be obtained. More interesting than this, however, are the reproductions of the actual photographs, of which two are shown in Figs. 5 and 6. They are the lower ventral and the lower antral pictures. It is interesting to compare the sizes of the squares in the ventral photograph, where the camera was near the model wall, with some of the squares in the antral region. They are all of the same dimensions. The photographs also show what definition we may expect when contrasts are as great as black print upon a white ground. If we look at the lower antral photograph we see the brightly illuminated arch of the lesser curvature with the larger sized images contrasted with the more dimly lighted small imaged squares of the part of the antrum forming the greater curvature. The actual pylorus is invisible. It is unfortunate that we do not see any more of the lesser curvature, and that the definition of the pyloric region of the stomach fails from small size of the image and poor quality of the illumination. And although the whole area visualised is a large part of the stomach it is not all actually useful as far as practical medicine is concerned.

FIG. 7.



To show how the camera can be withdrawn from contact with the lesser curvature by bending the patient to the right.

FIG. 8.



To show how the camera may be made to advance along the greater curvature and thereby photograph more of pyloric region by bending the patient to the left.

Technique of Gastro-photography.

Though the apparatus has reached such perfection, we have found many pitfalls in the clinical application. Errors can creep in at every stage of the process, so that we cannot yet ensure at will a successful series of prints in every case. The preparation of the patient is important. His stomach must be empty for the examination. If any liquid should find its way into the camera the films will be spoilt. It suffices when the photograph is taken in the early morning to withhold food from the previous evening. In patients with much retention or with hypersecretion the stomach will have to be evacuated through a tube. Ryle's tube is not suitable for this purpose, owing to the small size of the holes, which are apt to be plugged by food remnants. To prevent liquid entering the apparatus during its passage through the œsophagus, a white paraffin wax is plastered into the crevices between the shutter and the camera itself. The introduction of the camera is made much simpler and easier for the patient if the pharynx and larynx be first sprayed with 5 per cent. novocain. This makes not the slightest difference, the prejudice against it being quite baseless. If novocain be used the whole procedure can be carried out with very little discomfort, whereas without it some individuals exhibit an impassable spasm at the entrance to the œsophagus, the attempt to overcome which will cause considerable pain. The camera will pass more easily if its rigid extremity be directed down the œsophagus with the finger. It may be lightly lubricated with the paraffin wax, referred to above, while the connecting rubber tube may be moistened with water. The instrument can usually be felt to pass through the cardiac opening, after which it is pushed on until it comes to rest, held up by the resistance offered by the greater curvature. Air is then blown into the stomach, the patient having been previously warned to signal when he feels distended, at which moment the photograph is taken and the apparatus withdrawn. A good result will not be obtained unless the inflation is sufficient.

X ray photographs of the camera in position show how it lies in the inflated stomach. It is very apt to lie close to the lesser curvature, so close, in fact, that it is not uncommon for no recognisable image to be obtained from the upper cameras facing antralwards. By bending the patient's shoulders to the right it is possible to increase the distance between the lesser curvature and the apparatus (Fig. 7), but this manœuvre will also carry it away from the most favourable position for seeing round the lesser curvature into the prepyloric region of the stomach, for which purpose it is better to have the patient's shoulders bent to the left (Fig. 8). All things considered, it seems more convenient to have the patient sitting up, but his back must not be allowed to sag. The lesser curvature may also be well seen in the left lateral position, with the pelvis and shoulders slightly raised. In the elongated variety of stomach a prolongation is screwed on to the extremity of the apparatus, otherwise, resting on the greater curvature, it would be too far below the lesser curve to get useful pictures.

Interpretation of Photographs.

The extreme variation in the size of images has already been referred to. It is one of the great difficulties of interpretation. It seems, however, that experience in reading photographs will tell here, and it is possible actually to measure the size of an image if a radiogram with the apparatus in position be made at the same time as the gastro-photograph. On the X ray film the image of the camera of known dimensions can be measured and calculations based upon the corrected distance of the object from the pinhole and the known distance of the film from the latter. This can only be an approximation, because the film distance varies somewhat, as the films themselves are not all accurately cut. Nevertheless, it is a useful approximation, and enables us to realise, as do Figs. 5 and 6, that a gastric ulcer, for instance, may have a very different aspect according as it is seen close to or from some distance.

We do not feel at this stage that we can be dogmatic about appearances seen through the eye of the camera. At first the photographs look like meaningless blotches. With increasing familiarity they undoubtedly take on significance. Sometimes, by a trick of vision, depressions have the appearance of projections and by not viewing the photograph as a whole from a sufficient distance we may perhaps fail to appreciate the forward bulging of the posterior wall of the stomach caused by the vertebral column or the bending round into obscurity of the lesser curvature. Much may be learned from the projection of shadows on the gastric mucosa, and the intensity of the illumination in the depths of hollows. The intense whiteness produced by light reflected from the surface of mucus is characteristic. It is helpful to make use of the knowledge of the appearances of the different parts of the stomach obtained by gastroscopy. It enables us to recognisé the difference between the folds of the greater and lesser curvatures and other aspects of the mucous membrane. The deviations from this normal—for instance, the drawing together of these folds by cicatrisation round an ulcer—are the features by which abnormalities are recognised.

Conclusions.

It is difficult to assess this new method of gastric examination at present. It is certainly a great technical achievement. It is also certainly sometimes capable of revealing abnormalities which remain concealed by any other method of investigation. Extended systematic study of gastric disorders is required. Light may be thereby thrown upon the different varieties of dyspepsia, the recognition of carcinoma may become possible in some instances at an early stage, before it is possible to discern its presence by other methods of examination. The drawbacks of the method are obvious. It is a highly complicated procedure requiring the utmost care at every step, and in the present stage of development cannot inevitably be made to produce results. It is a time-consuming examination. Only further study will show whether the gain is worth the immense trouble involved. As a means of research it is essential that it should be exploited. Doubtless its field of usefulness will be defined and experience will suggest alterations and simplification of technique. Such a safe method of gaining further knowledge of gastric pathology seems to offer distinct possibilities in the gastric investigation of digestive ailments.

We wish to thank Dr. H. C. Gage for his coöperation in the X ray work and Mr. W. J. Newly, who has been responsible for most of the photographic technical work, and to whose enthusiasm the success is in great measure due. Baron André de Veitschberger has throughout given us his guidance and the fruits of his experience; to him we wish to accord our grateful thanks.

THE DONORS OF FALMOUTH HOSPITAL.—The freedom of the borough of Falmouth has been bestowed upon Mr. William Mountstephen and Mr. Alfred Charles Collins, who between them bore the entire cost of the new hospital at Falmouth.

SOME RESULTS OBTAINED WITH THE GASTRO-PHOTOR.

By Stanley Wyard, M.D., M.R.C.P. Lond.,
PHYSICIAN TO THE CANCER AND PRINCESS BEATRICE (FORMERLY KENSINGTON, FULHAM AND CHELSEA) HOSPITALS.

The gastro-photor is an instrument whereby the interior of the human stomach can be photographed. By radiography after an opaque meal it has long been possible to reveal the size and shape of the stomach and any abnormality or irregularity in its outline; with the gastro-photor a permanent and visible record is obtained of the condition of the interior of the organ, though not of its size and shape. It is thus evident that radiography and intragastric photography supplement each other, and the new method may prove of great value in affording definite information in certain cases where radiography fails. The gastro-photor has been available in this country for so short a period that experience in its use is still very limited. The full extent of its powers has yet to be determined, but it is hoped that by its means it may be possible to reveal inflammatory changes in the mucosa, small non-penetrating ulcers, and ulcers about a gastro-enterostomy stoma when present. The reaction of an ulcer to treatment may also be followed and recorded.

Perhaps it may fulfil an even more important rôle. Precancerous changes are well recognised in certain situations; do they appear in the stomach? The relationship between simple ulcer and cancer is still in dispute, but it seems certain that cancer may arise quite independently of an ulcer. Will it be possible to demonstrate the earliest stage of such a growth and thus give the surgeon the best possible chance of eradicating the disease? It is clearly impossible to answer any of these questions at the moment, and the object of the present communication is merely to give some idea of the pictures which are obtained.

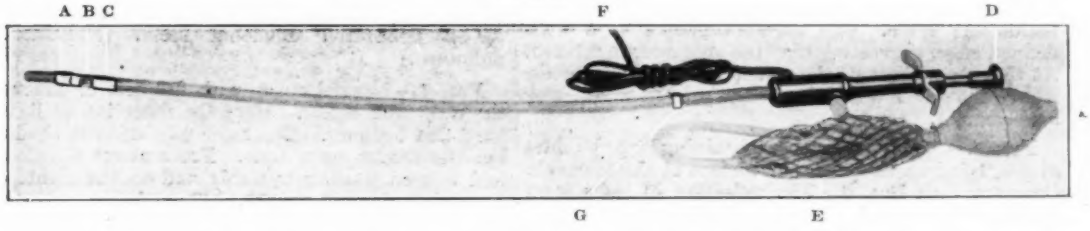
Use of the Apparatus.

The gastro-photor consists of two tubular metal cameras set at the end of an œsophageal tube. Each camera is divided into four compartments, and each compartment carries a photographic film. No lens is employed, but the image is focused on to the film by a pin-hole, which gives a more perfect definition than any lens. Each camera has eight pin-holes, so that each film receives two separate images, and 16 photographs are obtained by one exposure. Between the cameras an electric lamp is inserted and connected, through the œsophageal tube, with a transformer actuated from any electric lighting circuit having a voltage from 50 to 250, whether the current be alternating or direct. The pin-holes are covered by a sleeve moved by a Bowden wire passing up the tube to a handle at the upper end. When the cameras are in the stomach the handle is pushed down, causing the sleeve to uncover the pin-holes; a button on the transformer is immediately pressed, passing a current into the lamp so that the interior of the stomach is illuminated; finally the handle is released, allowing the sleeve again to cover the pin-holes, and the cameras are withdrawn. The whole operation only occupies two or three minutes.

Fig. 1 shows the instrument. A is the lower camera, carrying films 12×8 mm. C is the upper, with films 10×8 mm, so that the films can afterwards be readily distinguished. Between A and C is the lamp B. At the other end is the handle D, pressure on which exposes the films. By means of the bulb E the stomach is inflated immediately before the photograph is taken. The plug F connects the lamp with the transformer. G is a metal ring which slides along the tube to any desired position. The distance between B and G can be measured and then, if the ring be level with the patient's teeth, the situation of the cameras is accurately known.

The actual taking of a photograph is a perfectly simple operation; as with all these methods of examination, it is the interpretation of what one sees that presents a difficulty. Even in the most favourable circumstances this must be great until wide experience makes the observer familiar with the appearance of the gastric mucosa, but in the case of the gastro-photor two other factors add to it. In the first place, the negative obtained is only 3–4 mm. in diameter, and has to be enlarged 100 times, entailing more or less unavoidable loss of definition. In the second place a curved surface, the interior surface of the stomach, is focused on to another curved surface, the film in the camera, so that some degree of distortion of the image is inevitable. The two surfaces are curved in opposite directions, concavity towards concavity, which reduces, but does not eliminate, distortion. In spite of everything, however, many of the pictures show much detail, and the more pictures one examines the more detail one discovers in them.

Fig. 1.

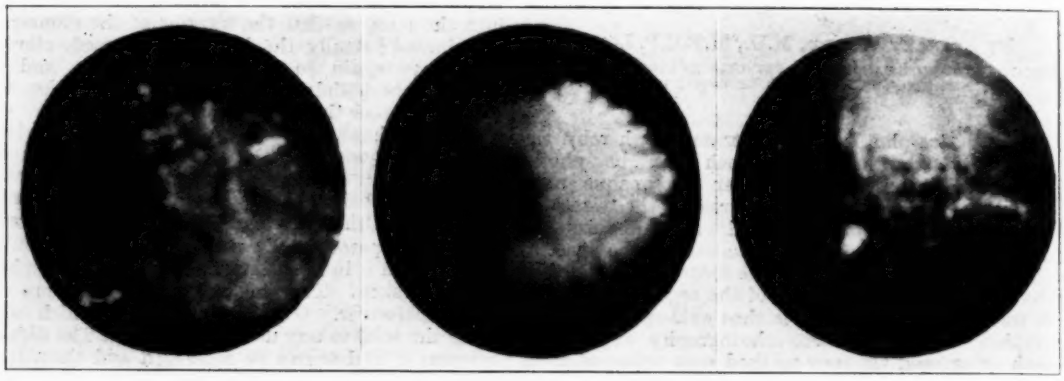


The Photographs.

The illustrations are from photographs obtained from patients at the Cancer Hospital during the past two months. When the work was commenced much valuable advice and assistance was given me by Baron de Veitschberger, one of the co-inventors of the apparatus, who has had much experience with it in America. In examining a picture it will be found that a far better appreciation of its features will be obtained if it be held at some distance, 18 to 24 inches, than at closer range.

Fig. 2.—The normal rugæ of the gastric mucosa over the anterior surface of the stomach. Towards the upper part of the picture they are irregular and capped with a small amount of mucus; to the right and downwards they radiate outwards and

FIGS. 2 3 4.



have a matt appearance, owing to the absence of mucus (× 1½).

FIG. 3.—The pylorus, closed. The rounded margins and linear lumen suggest that the sphincter is contracted. There is much mucus on one side. No lesion was discovered in the stomach clinically, radiographically, or photographically (× ⅓).

FIG. 4.—Pylorus seen as it turns backwards beside the spine. One margin appears as a well-defined edge, suggesting that the sphincter is relaxed. At the upper limit of the orifice is a drop of mucus. Above the orifice the normal rugæ present a reticular arrangement. (× 1.)

FIG. 5.—A mass of mucus, containing large bubbles of gas, lying on the posterior surface of the stomach. Compare with Fig. 6. The reflection of light from the surface is much harder; little or none is absorbed. The aspect nearer to the observer is not illuminated, and the large bubble nearest but one to the left casts a definite shadow. The mucus is situated on a surface which, to the left, is curving away backwards. The patient was suffering from gastritis associated with a deeply penetrating ulcer (shown photographically in Fig. 10, and radiographically) on the lesser curvature. (× ⅓.)

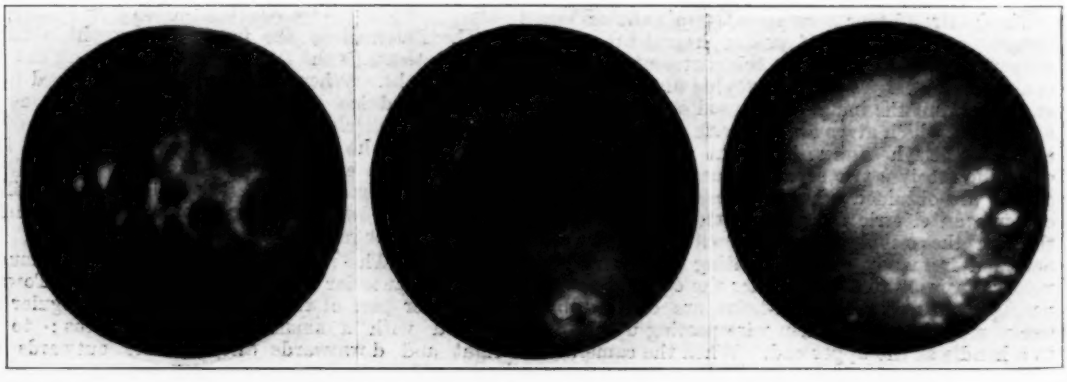
FIG. 6.—A gastro-enterostomy stoma just above and to the left of the centre of the picture. Above, and to the left again, a nodular appearance is seen. The interpretation is difficult. Comparing it with Fig. 5, the two are very similar, but here the reflected light is softer. Possibly the mucosa is swollen and nodular, more probably a plaque of mucus lies alongside the stoma, and with it bubbles of gas are incorporated. The patient had a gastric ulcer (shown in Fig. 8, and also radiographically). When the photograph was taken it was known that an operation had been performed five years previously, but not until a photographic diagnosis had been made were the notes available, proving that a posterior gastro-enterostomy had been performed at another hospital for a perforated duodenal ulcer. (Magnification unknown.)

FIG. 7.—Normal rugæ, with droplets of mucus to the right and below. Here the reflection of light is hard and brilliant. The rugæ cast definite shadows, but the mucus casts none. From about 8 o'clock a fold is seen passing upwards and to the right, disappearing about 2 o'clock. About halfway it forks, the lateral soon fading away. Higher up, it again forks, and both branches are visible as far as the limit of the picture. Other rugæ are less easily distinguished. (× 1⅓).

FIG. 8.—Ulcer on the posterior surface. The patient was the same as in Fig. 6. On two separate occasions the ulcer was demonstrated by X rays. It is situated on the posterior surface near to the lesser curvature. It is seen about 2 o'clock in the picture, and there is much mucous exudate round about it. (× 1⅓.)

FIG. 9.—An ulcer on the lesser curvature, surrounded by swollen, œdematous rugæ. Radiograms showed "a small ulcer on the lesser curvature." The

FIGS. 5 6 7



FIGS. 8 9 10.

ulcer is situated on the lesser curvature, and is seen below and to the right. The mucosa above and to the left presents a rounded, nodular appearance. (Magnification unknown.)

FIG. 10.—An ulcer with raised edge partly surrounded by frothy mucus. The same patient as in Fig. 5. The base is nodular. Below and to the left the wall overhangs and casts a shadow. A spur of swollen mucosa runs upwards and to the left in the lower part of the ulcer. Radiograms show a large, penetrating ulcer. (Magnification unknown.)

FIG. 11.—Two small polyps on the lesser curvature in a patient suffering from epigastric pain, nausea, flatulence, and loss of weight. Three years ago gall-stones were removed by operation. No radiographic evidence of any gastric lesion. The polyps are seen as two small, papillary growths placed close together where light and shadow meet to the left of the picture. They have a dull matt surface, and throw a shadow upwards. To the right of them rugae are seen. ($\times \frac{1}{3}$.)

FIG. 12.—Carcinoma of the pyloric end of the stomach. The nodular surface of the growth is evident, as is the curved edge rising from the mucosa alongside. Radiograms showed a filling defect. At operation an inoperable cancer was found. ($\times \frac{1}{2}$.)

FIG. 13.—Partial gastrectomy performed six months previously. The scar is seen running from right to left. On the extreme left the wall is in partial shadow, and a number of dark spots are visible. These are probably bubbles of gas in a layer of mucus. ($\times \frac{1}{3}$.)

As already explained, each film receives two separate images. If one pair of pin-holes lies close to the wall of the stomach the two pictures on the corresponding film will be totally different, representing separate and distinct portions of the gastric wall. If the holes be some distance from the stomach wall the two pictures on the corresponding film will be more or less identical, the similarity becoming greater the greater the distance between camera and stomach wall. A very simple apparatus has been devised whereby it is possible, if the two pictures are at all comparable, to measure the magnification reached. But if the two pictures are different, so that no point on the one corresponds with any point on the other, then no means of determining the magnification is known. Hence in some of the illustrations it is impossible to state the relationship in size between the picture and the part of the stomach wall represented. The less the distance between the camera and the stomach wall the greater the magnification in the final picture, so that those pictures of which the magnification is unknown are probably about, or larger than, natural size.

Comment.

I think that these illustrations are sufficient to show that lesions of the stomach can in fact be reproduced photographically, and that they warrant the hope that in the future the method will be found of definite clinical value. They are selected from the results of examining 31 patients. In none of these was the slightest difficulty experienced in introducing the instrument into the stomach, nor did the introduction

FIGS. 11 12 13.

occupy more than a few seconds. Several of the patients have subsequently been examined a second time. No patient has refused a second examination. One lady, not included in the above number, developed a spasmodic contraction of the pharyngeal constrictors immediately the camera reached the base of the tongue, so that although an attempt was made on two separate occasions to pass the instrument both attempts failed. This is the only failure up to the present.

It is a pleasure to record my great indebtedness to Mr. Leslie Smith, of the Radiological Department of the Cancer Hospital, for the time and labour he has devoted to the development and printing of the photographs. To obtain the best results a high degree of skill and experience are essential. I also thank Prof. J. M. Woodburn Morison, director of the department, for placing Mr. Smith at my disposal.

COMPLETE AND PARTIAL HEART-BLOCK DURING AN ATTACK OF RHEUMATIC FEVER.

By Maurice Campbell, M.D. Oxf., F.R.C.P. Lond.,

ASSISTANT PHYSICIAN, GUY'S HOSPITAL; AND PHYSICIAN TO OUT-PATIENTS, NATIONAL HOSPITAL FOR DISEASES OF THE HEART.

Delayed conduction down the auriculo-ventricular bundle, as shown by a lengthening of the P–R interval, is not very uncommon in the course of acute rheumatism; a higher degree of block, giving rise to dropped beats or 2 : 1 response, is less common, and complete heart-block is rare. The following patient is therefore of interest, especially because of her complete recovery.

She had rheumatic fever when 12 and again when 14, and came under observation with her third attack in 1925, when 25 years old. Pyrexia persisted for ten days, and after three weeks there was still pain and swelling of the joints in spite of treatment with salicylates. The heart was enlarged to the left; in the aortic area there was a diastolic murmur which was conducted to the apex; there were no signs of mitral stenosis. Radioscopy showed enlargement to the left, typical of aortic disease, without any dilatation of the auricles or right-sided enlargement to suggest mitral stenosis. The average blood pressure was 125/60. She rested in hospital for six months. During the next three years she was able to do easy housework, and generally seemed rather better when taking tincture of digitalis, 30 minims daily.

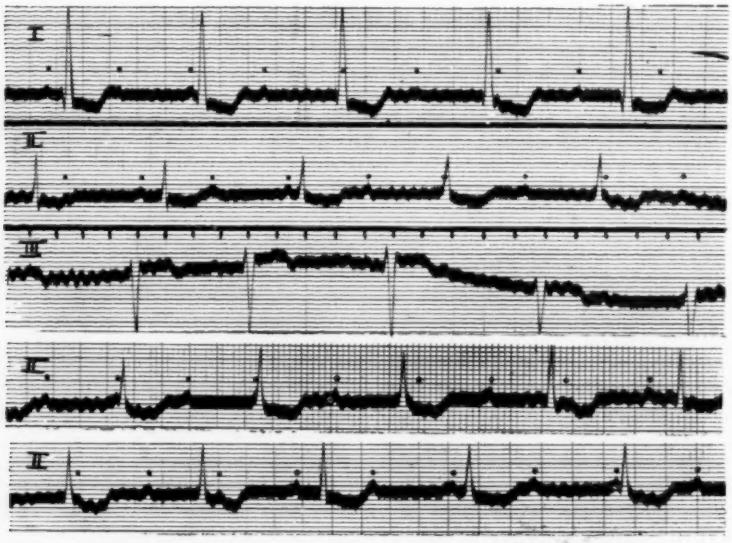
On Dec. 16th, 1928, she was readmitted for pains in the joints; her temperature rose to 102° F. and her pulse-rate to 140. On the 21st her pulse was noticed to be slower and irregular; it felt like frequent dropped beats alternating with runs of extrasystoles, but actually these were the short periods when the ventricle was responding to each alternate beat, or to each beat of the rapid auricle. Since admission she had been taking daily 20 minims of tinct. digitalis, which was at once stopped and not again given. At the end of the month she seemed better, with no pyrexia and little pain; the pulse continued irregular.

On Jan. 1st, 1929, the pains returned and her temperature rose to 101°, but the pulse became more regular, the rate falling to 50–60. On the 5th, her temperature having fallen to normal, an electrocardiogram showed complete heart-block (Fig. 1), though the ventricular rate was about 60 and a little more than half the auricular rate. The joint pains persisted without further pyrexia till about the middle of the month. The Wassermann reaction was negative and there was nothing to suggest that she had suffered from a syphilitic infection.

On Jan. 11th, when the pulse had become faster and irregular, an electrocardiogram showed short runs of partial heart-block with the P–R interval lengthening until there was a dropped beat, followed by 2 : 1 heart-block for a few beats, when the cycle was repeated (Fig. 2)—e.g., in one case the P–R intervals in seconds were 0·16, 0·20, 0·20, 0·20, 0·25, no response, 0·16, no response, 0·16, &c. There was no significant change in the electrocardiogram on Jan. 21st and on Feb. 9th. The auricular rate was generally a little over 100 and the ventricular rate varied each few seconds from 50 to 100. On Feb. 28th the pulse-rate was regular, just over 60 with constant 2 : 1 block, which could hardly have been diagnosed even from the electrocardiogram except by comparison with previous and subsequent records. On March 3rd there was a slight return of pain and the temperature rose to 102°, but it fell to normal on the fourth day and there was no further pyrexia. In April she was allowed up on a couch, and in May went away to a convalescent home. Electrocardiograms in March and April still showed irregular 1 : 1 and 2 : 1 block, the auricular rate being about 100–120 and the ventricular rate about 70.

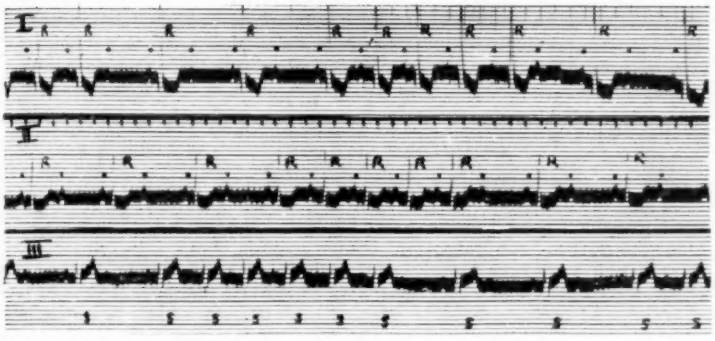
She returned home in July and was then able to walk to hospital. Rather to my surprise, all signs of block had disappeared and her

Fig. 1.



Jan. 5th, 1929. Complete heart-block, with auricular rate 114–116 and ventricular rate 62·5. Lead II. is here shown three times. In this and Fig. 2 the dots mark the auricular P waves. The time marker shows fifths and twenty-fifths seconds.

FIG. 2.



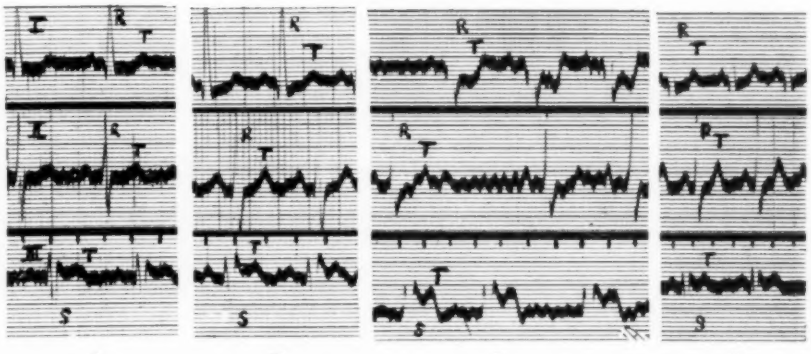
Jan. 11th. Short alternating runs of 1 : 1 and 2 : 1 heart-block—auricular rate 107. Note increasing length of P–R interval where there is 1 : 1 response, and inversion of T waves, completely in lead I. and partially in lead II.

condition seemed much the same as a year before (Fig. 3 D).

In addition to the changes in the P–R interval there were striking changes in the T waves which provided further evidence of myocarditis. Before this attack the T waves were just upright in lead I., upright in lead II., and atypical but upright in lead III. (Fig. 3 A and B). Apart from minor digitalis effects there had been no changes for two years. In January, 1929, when she had heart-block the T waves were deeply inverted in lead I., slightly inverted in lead II., and more upright but atypical in lead III. (Figs. 1 and 2). At the end of January T was partly upright in lead II. (Fig. 3 C); by February it was definitely upright, and T in lead I. was less inverted, being now biphasic. In April there had been no further change and T was still as much inverted in lead I., but in July and August there had been a complete return to the normal upright waves, just as before the attack (see Fig. 3 D). It is most usual for inversion to occur in lead I. where there is preponderance of the left ventricle, as there has been all the time in this patient. An orthodiagram taken in October, 1930, shows some enlargement of the heart to the left without evidence of mitral stenosis. There was no appreciable change from 1926.

The patient has since remained well and is now (May, 1931) able to do as much as before this attack of rheumatism. Frequent electrocardiograms since have always shown a normal P–R interval. She has, therefore, made a good recovery although complete heart-block was present for some days, and partial heart-block for some months, during and after her fourth attack of rheumatism. It is in accord with general experience that heart-block is more apt to occur in cases with disease of the aortic valve.

FIG. 3.



A B C D

Electrocardiograms before, during, and after her fourth attack of rheumatic fever. (A) February, 1927, (B) February, 1928, (C) Jan. 21st, 1929, and (D) August 5th, 1929. Figs. 1–2 were obtained in the interval between (B) and (C). Note that the P–R interval in (D) is of normal length in spite of the presence of block previously. Note also the inversion of the T wave in lead I., with subsequent recovery (see text).

CLINICAL AND LABORATORY NOTES

APLASTIC ANÆMIA.

SEQUEL TO A CASE REPORT.

BY A. G. GIBSON, M.D. OXF., F.R.C.P. LOND.,
PHYSICIAN TO THE RADCLIFFE INFIRMARY, OXFORD.

THE case history of the patient with aplastic anæmia published in THE LANCET (1926, ii., 948) under the title of The Action of Adrenalin in Aplastic Anæmia aroused some interest, and it is important that the subsequent history should be put on record.

The patient was a girl of 11 who, in the spring of 1923, began to suffer from bruises in various parts of the body, for which no origin could be ascertained, and she was paler than normal. A diagnosis of aplastic anæmia was made. She was given seven transfusions during a period of 19 months and, from a time when she appeared almost certainly to be failing rapidly, with hæmorrhages in various parts of the body, daily injections of adrenalin produced an apparent and startling recovery. Her history was traced at that time for 16 months after the treatment with adrenalin had begun, during which time she had been able to take her part in ordinary life, though the blood count was persistently abnormal. The last blood count for which there were complete figures at that time, in July, 1926, showed 3,490,000 red cells, 72 per cent. of hæmoglobin, a colour-index to 0·95, and 4680 white cells. The differential count (per cent.) was: polymorphs, 32·5; small lympho cytes, 45·5; endothelials, 16·5; eosinophils, 0·5;

neutrophil myelocytes, 4·0; eosinophil myelocytes, 0·5; large lymphocytes, 0·5.

From the end of 1926 until her death on April 30th, 1931, she was continuously on adrenalin, with one brief interval. Her general appearance was that of a slightly built young woman with a just noticeable pallor, and a slight darkening of the skin of the face. Her weight, which was 6 st. 8 lb. in September, 1926, rose with slight intermissions up to 7 st. 1 lb. in February, 1931. She was fairly well nourished, and the skin, especially over the abdomen and to a lesser extent over the chest, presented a marked generalised pigmentation. Two deeper patches were present on the back, but they had been present before the illness. There was no pigmentation of the mouth nor any intense pigmentation of those parts subjected to slight irritation, such as the axillæ and waist. At no period was the pulse rapid, the blood pressure remained normal—about 120 maximum and 80 minimum—though on one occasion the maximum was 140. The heart was never found enlarged, and no murmurs were ever detected. The abdominal organs were also normal; neither liver nor spleen was enlarged during any occasion on which she was examined subsequent to 1926, and there was never anything abnormal in the urine. Menstruation had remained regular, though on occasions it was scanty and shorter than it had been.

On no occasion—except that to be referred to—was there any return to the hæmorrhagic condition from which she had previously suffered. "Bruises" were indeed occasionally noticed though, since she was an active person, a slight injury could not be excluded. Though for the most part she led an active existence in the country, and was able to walk and swim as well as other girls of her own age, she could not stand the burden of a post in London with light duties which she tried to take up. She never appeared fatigued, and was never unusually breathless when at home.

In March, 1930, her condition was more or less stationary; she was in good health, apart from the anæmia, and it was thought desirable to give up adrenalin in order to see whether she could do without it. After 12 days she had two slight nose-bleedings, and a third subsequently, much slighter, after the adrenalin was resumed. The opinion of her parents was that it was not wise to give up the adrenalin. She had not, however, felt unwell as a result of leaving it off.

She had occasional colds. In 1929 she suffered from an attack of diarrhœa and was two days in bed, and it was not generally thought that she had any specially lowered resistance to intercurrent febrile disease. In the last four days of April, 1931, however, she contracted chicken-pox from another person, and the rash, which was typical in distribution and character, on the third day became hæmorrhagic. There were sores round the mouth, extreme fœtor of the breath, with gangrene of the gums, and dysphagia set in 18 hours before death. Hæmorrhage occurred from the bowel, and there was some blood in the urine. She relapsed into a muttering delirium. Two gangrenous patches appeared on the back. Before this, however, there had been several attacks of excruciating pain in the back, requiring morphia. This pain was not located to any function, and its anatomical origin could not be determined. She died on the fourth day of the disease.

The condition of the blood had remained practically at the level that was reported before. In all, 25 blood counts were taken between September, 1926, and February, 1931. The average of these is as follows: red cells, 3,020,000; hæmoglobin, 64 per cent.; colour index, 1·6; white cells, 2700. Differential count: polymorphs, 27 per cent.; lymphocytes, 56·7 per cent. Taking the hæmoglobin as an indication of the anæmia, there was a tendency to fall as time went on. The average hæmoglobin of the year's counts is as follows: 1927, 69 per cent.; 1928, 59 per cent.; 1929, 66 per cent.; and 1930, 58 per cent. The last hæmoglobin percentage recorded was 56 per cent. The halometer reading (Eve), which is an indication of the size of the corpuscles, showed no significant variation from the normal. Microscopically there was usually some evidence of activity of the bone-marrow in the presence of anisocytosis and polychromasia. Now and then immature cells, such as neutrophil myelocytes and large lymphocytes, were present in the differential counts. Platelets were usually present, but in small numbers (not counted).

Numerous attempts have been made to ascertain the causation of the anæmia, both from the history and by giving drugs. Her residence in India, and indeed the diagnosis of malaria made in that country, appeared to suggest that disease as the initial cause. Treatment by quinine, however, has never made any difference that could be estimated, and there have been no attacks of fever such as could be attributed to that agent.

The conclusion appears to be that, through some unknown cause, the blood-forming organs had been partly destroyed, leaving the patient with sufficient for a modified existence when constantly stimulated by adrenalin, but that, without the adrenalin, the bone-marrow activity was insufficient to prevent the tendency to hæmorrhage. During the greater part of her life, since the adrenalin was started, there was no special lack of resistance to infections, but this lack of resistance was unmasked or induced by the attack of chicken-pox which brought back the hæmorrhagic tendency in its former violence.

TREATMENT OF HABITUAL ABORTION WITH WHEAT-GERM OIL (VITAMIN E).

BY P. VOGT-MÖLLER, M.D.

(From the County and City Hospital, Odense, Denmark.)

THE existence of a fat-soluble antisterility vitamin—vitamin E—must now be considered established. Papers on this vitamin up to the year 1927 are reviewed in Evans and Burr's monograph [1]; I would, however, mention here that the first information about such a vitamin is due to Evans and Bishop.[2]

Vitamin E is found in certain vegetable oils, chiefly in wheat-germ oil, but also in many other oils of vegetable origin. Sure,[3] for instance, found it in crude maize oil but not in the commercial product of maize oil; it is also to be found in plant leaves—e.g., of lettuce. Little or no vitamin E is found in animal substances; it is, for instance, not found in cod-liver oil.

As yet the importance of vitamin E to the organism has only been elucidated in detail for rats. Beard,[4] however, has proved that mice, too, need vitamin E. The sterility occurring when this vitamin is lacking in the food is of a different pathogenesis in the two sexes. In the male the vitamin seems to play a part in spermatogenesis, histological changes of the testes being found in avitaminosis E, especially a more or less marked degeneration or even complete disappearance of the spermatogonia. In the female, on food free from vitamin E, ovulation and implantation take place normally, the reproductive system being unimpaired, and the sterility being due to the fact that the implanted ova are resorbed at an early stage of the pregnancy. In male as well as in female animals vitamin E may be stored to a certain extent.

In 1927 Evans and Burr [5 6] showed that various fats—e.g., lard—when mixed with vitamin E (wheat germ or wheat-germ oil) were capable of depriving the latter of its value as a vitamin; this vitamin-destroying property of the fat increased with its rancidity, and Evans and Burr [7] drew attention to "the possibility of destroying vitamin E by the development of rancid substance in wheat-germ oil itself," and also to the importance of using fresh preparations. Without going into further detail as far as researches of recent years are concerned, I need only refer to McCollum and Simmonds's [8] and Jackson's [9] monographs, and to Cummings and Mattill's [10] work.

The preparation used as the source of vitamin E in the cases mentioned below was wheat-germ oil; by the courtesy of Miss M. H. Roscoe, of the Lister Institute, London, the wheat germs used—a very pure preparation—were delivered by Messrs. I. and H. Robinson, Ltd., Deptford Bridge Mills, London, and the wheat-germ oil was made from the germ in the manner described by Vogt-Möller and Bay,[11 12] and Vogt-Möller.[13] According to Evans,[14] wheat-germ oil only contains minimal amounts of vitamin A.

The dose of wheat-germ oil necessary for rats is only a few drops daily, and, according to Evans and Burr,[1] vitamin E (wheat-germ oil) is efficacious both on enteral and parenteral application. That wheat contains toxic elements when extracted in ether, as was maintained by Hart, Miller, and McCollum,[15] and by Hart, McCollum, Steenbock, and Humphrey,[16] has been thoroughly refuted by Osborne and Mendel,[17] and all researches of recent years.

As I had worked for years on the question of vitamin E and reproduction in small experimental animals (rats and mice) without reaching any essentially new conclusion, but confirming Evans and Burr's investigations in every respect, it was natural for me to try its effects in veterinary medicine. Vogt-Möller and Bay [11 12] obtained favourable results in the treatment of sterility in cows with wheat-germ oil; from this treatment to the treatment of habitual abortion in women there was only one step. Since treatment with cod-liver oil, as suggested by Poulsson,[18] and with Vigantol, as recommended by Novak,[19] had to be considered as contraindicated from an experimental point of view in habitual abortion, cod-liver oil being capable of causing abortion in rats when administered in excess (as shown by Hartwell [20] and Sure [21]), I tried wheat-germ oil, which in both cases led to the desired result—viz., a pregnancy with a normal course and a healthy viable child.

CASE 1.—The patient was a married woman, aged 24, who, apart from the ordinary diseases of childhood, had always been in good health and had menstruated normally since her thirteenth year. Both she and her husband were healthy and sound, and in both of them the Wassermann test was negative. The patient had aborted four times after absence of menstruation for seven to eight weeks. She came under treatment six weeks after the last menstruation, and on examination an enlarged—and in all probability pregnant—uterus was found, but otherwise nothing abnormal. The diagnosis of pregnancy having been further substantiated by a positive Zondek-Aschheim reaction, a treatment with wheat-germ oil by mouth was instituted, 5 c.cm. being given once a day during the first fortnight, then 5 c.cm. every second day for the next fortnight, and then 5 c.cm. every sixth day. Throughout the pregnancy the patient was quite well, and at term she was delivered of a healthy girl, weighing 3260 g., who is doing well. The placenta was of normal appearance. The treatment with wheat-germ oil did not cause any inconvenience.

CASE 2.—The patient, aged 29, had been married for six years. She had had the ordinary children's diseases and had menstruated regularly since her fourteenth year. At the age of 16 she had had acute appendicitis, and an appendicectomy had been performed. At the age of 25 she passed through a normal labour; the child, a boy weighing 3400 g., is in good health. The patient then became pregnant five times, but aborted each time in the third or fourth month. The abortions were quite spontaneous each time, no interference being made. Both the patient and her husband were healthy, and the Wassermann test was negative in both. During the last pregnancy when the patient came under treatment in the seventh week, a course of treatment with wheat-germ oil, consisting of 5 c.cm. by mouth daily for a fortnight, was instituted; then 5 c.cm. was administered every sixth day during the remaining period of the pregnancy. The patient showed a good toleration to the treatment, and at term a healthy girl weighing 2900 g. was born; the child is in good health.

The diet of these two patients did not deviate from the ordinary food taken in Denmark; it can hardly have been poor in vitamin E, but possibly the need for this vitamin varies in different individuals, so that a hypovitaminosis E may have been present in the above cases. The material, however, is too scanty to allow us to base anything decisive on it, but nevertheless it will presumably be inferred that vitamin E preparations may be of therapeutic value in the treatment of habitual abortion in women.

REFERENCES

1. Evans, H. M., and Burr, G. O.: The Antisterility Vitamin Fat-Soluble E. Mem. Univers. of California, 1927, viii.
2. Evans, H. M., and Bishop, K. S.: Science, 1922, lvi., 650.
3. Sure, B.: Jour. Biol. Chem., 1926, lxix., 29.
4. Beard, H. H.: Amer. Jour. Physiol., 1926, lxxv., 682.
5. Evans, H. M., and Burr, G. O.: Jour. Amer. Med. Assoc., 1927, lxxxviii., 1462.
6. Same Authors: Ibid., 1927, lxxxix., 1587.
7. Same Authors: Jour. Biol. Chem., 1928, lxxvi., 273.
8. McCollum, E. V., and Simmonds, N.: Newer Knowledge of Nutrition, 4th ed., New York, 1929.
9. Jackson, C. M.: Arch. Pathol., 1929, viii., 273.
10. Cummings, M. J., and Mattill, H. A.: Jour. Nutr., 1930–31, iii., 421.
11. Vogt-Möller, P., and Bay, F.: Maanedsskr. f. Dyrlæger, 1931, xliii., 20.
12. Same Authors: Veter. Jour., 1931, lxxxvii., 165.
13. Vogt-Möller: Hospitalstidende, 1931, lxxiv., 567.
14. Evans, H. M.: Jour. Nutr., 1928–29, i., 23.
15. Hart, E. B., Miller, W. S., and McCollum, E. V.: Jour. Biol. Chem., 1916, xxv., 239.
16. Hart, McCollum, Steenbock, H., and Humphrey, G. C.: Jour. Agric. Res., 1917, x., 175.
17. Osborne, T. B., and Mendel, L. B.: Jour. Biol. Chem., 1919, xxxvii., 557.
18. Poulsson, E.: Münch. med. Woch., 1927, lxxiv., 674.
19. Novak, J.: Zentralbl. f. Gynäk., 1930, liv., 2155.
20. Hartwell, G. A.: Biochem. Jour., 1927, xxi., 1076.
21. Sure, B.: Jour. Biol. Chem., 1927, lxxiv., 45.

A CASE OF XEROSTOMA AND XEROPHTHALMUS.

BY JAMES L. O. TILLEY, M.R.C.S., L.D.S.R.C.S. ENG.

A MARRIED woman, aged 34, with no children and a good family history, had suffered during childhood from epistaxis and "nervous coryza" and at the age of 15 from profuse sweats, which were particularly associated with mental agitation. At the age of 21 she had had diphtheria, followed by paresis of the soft palate. For these complaints she had received X rays (for the sweats) and cauterisation of the nose (for the epistaxis and nervous coryza). The treatment was stated to have been beneficial. Her general physical condition was normal. She was highly strung but there were no symptoms of neurasthenia or hypochondria.

On June 29th, 1925, the patient was subjected to severe mental agitation and strain. A fortnight later, whilst driving to her home, she suddenly became aware that she was unable to articulate and could only swallow with difficulty until she was able to moisten her mouth and throat with water. At this time she "suffered great mental agony." This

incident coincided with the commencement of a gradual decrease in the amount of saliva and with a feeling of "dryness in the nose." A year later she suffered from severe paroxysms of headache which lasted for three days, and were followed by a decrease of the lacrymal secretions. Eighteen months after the initial shock (Dec., 1926) there was a complete cessation of all normal secretions from the eye, nose, and mouth, but during that period and up to the time of examination, she had secreted thick sebaceous material from the Meibomian glands and mucus from the nose, while on rare occasions globules of mucus had appeared in the mouth.

The symptoms of which the patient complained and the associated pathological conditions of the three organs, eyes, nose, and mouth, were as follows:—

Eyes.—Vision and pupil reflexes normal. There is a complete absence of moisture on the eyeball and, however strong the emotion or local irritation, there is no lacrymal secretion. A constant accumulation of thick sebaceous material from the Meibomian glands covers the eyeballs and is most marked on waking or when the patient is worried or mentally agitated. The irritation which results from this secretion necessitates frequent efforts on the part of the patient to remove it. Collosol argentum has given some relief while other applications seem to aggravate the discomfort. Whether the Meibomian secretions are abnormally copious and tenacious or only seemingly so (due to the absence of secretions from the lacrymal and Krause's glands), it is difficult to determine. On eversion of the upper eyelid the inferior lacrymal gland is seen to be to some extent atrophied, but the outlines of the Meibomian glands are well marked. There is some occlusion of the puncta lacrymalia and I have had difficulty in passing a sound.

Nose.—The sense of smell is good. The patient is able to sneeze but no liquid secretion is exuded. Every morning there is a large accumulation of mucus which adheres to the back of the soft palate and has to be removed by a nasal douche before the patient can breathe or articulate in comfort. She finds vaseline, applied inside her nostrils, gives relief from the dryness.

The nasal mucous membrane is normal in appearance but without the normal moisture. The patient has not suffered from colds or nasal catarrh since the commencement of her complaint.

Mouth.—The sense of taste is normal. There is a complete absence of salivary and buccal liquid secretion. The mucous membrane of the cheek, palate, and gums is smooth, shiny, and dry. The teeth show a marked tendency to decay. There is slight chronic superficial glossitis. Mastication, deglutition, and articulation are difficult and nearly impossible unless the patient first moistens her mouth.

The plicæ sublingualis are somewhat atrophied. The orifices of both Stenson's and Wharton's ducts are much contracted, and it has been found impossible to detect the orifices of the left upper Stenson's duct even when using a magnifying glass; but a strand of silkworm gut has been passed through both Wharton's ducts and the right Stenson's duct. After massaging the submaxillary region, while the patient exerted suction at the same time, two or three globules of mucus were occasionally seen around the orifices of Wharton's ducts. Galvanism has been applied to the chorda tympani nerve but without effect. Salivation takes place after the injection of pilocarpine, and also occurred during an attack of acute toothache lasting for three hours in 1930.

Food.—The patient can take any food except that of an acid or astringent nature, and she states she has "the digestion of an ox." The absence of ptyalin has been compensated for by the development of a desire to take large quantities of sugar, and she swallows about 15 ordinary "lumps" of sugar daily.

The senses of smell, taste, and sight are in no way impaired, nor is the digestion. The dryness and local discomfort of the parts affected, particularly the eye, and the difficulty in masticating and talking, are the only symptoms complained of. The mucus and Meibomian glands seem to function normally; the glands affected are those secreting liquid secretion. That all the glands can function is shown by the results of injection of pilocarpine, and that the whole salivary reflex arc is intact, if only as a result of strong stimuli, is proved by her salivating as a result of pain and to a lesser degree by the effect of pilocarpine.

Her symptoms seem to result from some derangement or disharmony of her sympathetic (autonomic) system. The most likely explanation of the cause and of its consequent symptoms appear to me to be as follows:—

1. That there has been a desensitising of some part of her reflex arc, with the result that only strong stimuli effect reflex action.

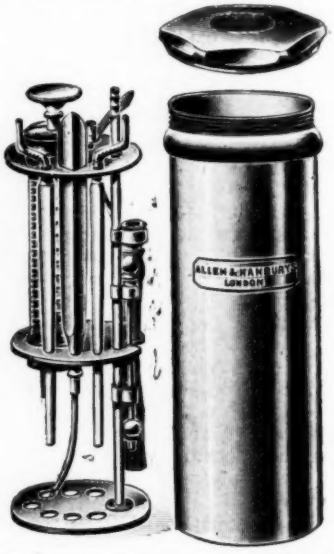
2. That the inhibition centres and perhaps the cortical connexions, either sympathetic or parasympathetic — it seems impossible to determine which—have become permanently excited by the residual effect of the initial shock.

The patient has unfortunately been unable to take complete rest or a holiday since the onset of the symptoms. Many drugs have been tried but none has been of any benefit. The treatment has resolved itself, during the last month, into repeated injections of pilocarpine, by which I hope to overcome the diminished sensitivity of the reflexes in question to normal stimuli; and there is no doubt that of late there has been more lacrymose secretion and that the nose is less dry.

NEW INVENTIONS

SPIRIT-PROOF CASE.

THE difficulty of sterilisation of the maxillary antrum puncture outfit and paracentesis knives before use has been met by the spirit-proof case here illustrated. The antral puncture outfit is the one designed by Mr. Cokeley, and all the instruments are of stainless steel.



Messrs. Allen & Hanburys, Ltd., Bethnal Green, London, E.C.2, are the makers.

ALFRED WALFORD, F.P.C.S.

MANCHESTER HOSPITALS.—The foundation-stones were laid recently of the new Christie Cancer Hospital and the Holt Radium Institute at Withington. The cost, including the nurses' home, will be £150,000. The new hospital will have 104 beds instead of the present 33; last year there were 450 in-patients. The ceremony marked the physical union of two institutions which in separate buildings have for some years carried on work which has lately become so closely related that the boards of management have just been amalgamated under the chairmanship of Mr. Nathan.—Large additions to Ancoats Hospital have just begun. The new buildings will include a ward block four storeys high, having 15 beds on each floor, another block consisting of a massage department, a pathological department, and two theatres. Had sufficient money been forthcoming a further ward block with 60 beds and quarters for the additional nurses, together with more spacious domestic accommodation, would have been provided. As it is, the work now begun will cost £65,000, of which £45,000 is at present in hand.

BRITISH MEDICAL ASSOCIATION.

ANNUAL MEETING IN EASTBOURNE.

PROCEEDINGS OF THE REPRESENTATIVE BODY.

THE annual Representative Meeting of the British Medical Association opened at the Town Hall, Eastbourne, on July 17th, with Dr. C. O. HAWTHORNE in the chair. Lord DAWSON OF PENN was elected President of the Association for 1932–33.

Antenatal Clinics.

Dr. B. H. PAIN, for Tunbridge Wells, moved that the Council should consider and report on the various antenatal schemes now being administered in different parts of the country without waiting until the Government maternity scheme was published. A year ago, he said, Dr. Brackenbury had stated that the Ministry of Health regarded the B.M.A. scheme for a national maternity service not unfavourably, but no Parliamentary Bill appeared to have been drafted embodying the principles of that scheme. In the meantime antenatal clinics in charge of whole-time medical officers were increasing throughout the country and patients were being examined by doctors who would never attend them in their confinements. To begin a maternity service on different lines from those laid down by the B.M.A. was to consolidate it on different lines. It was not the business of the local branches and divisions to oppose such developments in their own areas, but rather a matter for central opposition from the Council. In Kent, for example, the medical officer of health agreed with the policy laid down in the Association's scheme, but he had no influence with the 20 or 30 local authorities who were providing antenatal clinics with full-time medical officers.—Dr. H. B. BRACKENBURY (chairman of Council) said he was prepared to accept the motion of Tunbridge Wells, but he thought there were limits to the influence which could be exerted by the Council on local developments. It was not possible to insist that the proposals made to the Ministry of Health should be put into action. The Council could only rest in the assurance that the Ministry was actively in favour of a scheme following some of the lines laid down by the Representative Meeting. A circular had been issued to local authorities in which emphasis had been laid on the value of the general practitioner in local maternity schemes. The divisions and branches of the Association should see that this recommendation of the Ministry was carried out.

The meeting supported the proposal of Tunbridge Wells.

Medical Patents.

Dr. ARNOLD LYNDON (chairman of the Central Ethical Committee) introduced the question of patents. The proposal he brought forward was that the Association, while adhering to the traditional view that it is unethical for a medical practitioner who discovers or invents any substance, process, apparatus, or principle likely to be of therapeutic value, to act against the public interest by unduly restricting its use for his own personal advantage, should nevertheless recognise the propriety of utilising arrangements made by law for the protection of such inventions or discoveries and the reward of those who have made them, provided the principles enunciated above were duly safeguarded. Last year the question of dedicated patents had arisen and the whole subject, said Dr. Lyndon, had been referred back to the Council for further consideration, but in the last few months the Board of Trade Patents Committee had reported unfavourably on dedicated patents, so that these need no longer be regarded as coming in the realm of practical politics. Foreign countries at present held an advantage in that an English invention might be published and foreign competitors might patent it, thus keeping the inventor from using his own discovery. The value of the Patent Laws was to promote industrial activity. If after four years there was found to be abuse of a patent the controller could investigate the position and revise or withdraw that patent. Since the above motion was drafted, Dr. H. H. Dale had set out the point of view of workers in laboratories where medical research was carried on (*British Medical Journal*, June 27th, Supplement). Dr. Dale found that far from resenting the embargo on patents in medical research these workers regarded it as a charter of liberty and open dealing. He doubted, moreover, whether it was possible to give a fair definition of "unduly restricting" and he thought it would be far wiser to repeal all references to patents from the policy of the Association and to regard the subject as outside its province. Dr. Lyndon thought that some of the dangers foreseen by Dr. Dale would not occur. He pointed out that a patent could not be obtained without full disclosure of the details of the process or invention and, far from leading to secrecy, it brought any discovery that was made into the open.

Dr. J. S. MANSON spoke in support of Dr. Dale's letter. The meeting must consider whether Dr. Lyndon's motion opened the door to the commercialisation of medical invention and discovery. Patenting was permitted to medical men in other countries. He thought that considerable weight must be given to Dr. Dale's letter and he suggested that the subject might be referred for discussion by the Association Professionnelle Internationale des Médécins.—Dr. J. W. BONE and Dr. LYNDON thought that it was undesirable to go abroad for an opinion and that it was the business of the Representative Meeting to express their own view of the position.—Sir ROBERT BOLAM persuaded Dr. Manson to withdraw his suggestion and Dr. R. D. MOTHERSOLE introduced an amendment limiting the application of the motion to those engaged in scientific research. It was felt, however, that this amendment unduly restricted discussion and it was not accepted by the meeting. Sir ROBERT BOLAM then proposed another form of the motion to read as follows:—

> "That the Association approves the traditional professional usage in accordance with which it is unethical for any medical practitioner who discovers or invents any substance, process, apparatus, or principle likely to be of value in the treatment of patients to act against the public interest by unduly restricting, by patent or otherwise, the use and knowledge of such discovery or invention for his own personal advantage."

This, he said, would not interfere with the action of any person who thought he ought to take out a patent if he felt he could do so without disadvantage to the public. It also left the field clear for those who did not wish to take out patents.

Mr. H. S. SOUTTAR appealed to the meeting to adhere to the original motion. The present attitude of the Association placed the medical man in an invidious position and made him feel he was doing something wrong when he wished to take out a patent, whereas really he would probably be performing an act of value to his country and to national industry. Foreign countries were able, at present, to reap the reward of British inventions and discoveries. If the proper patents had been taken out at the time, we should have kept the aniline dye industry in this

country and there would have been no war.—He was supported by Dr. R. H. TODD, who declared that owing to our laws scientific men were forced to pass their discoveries across the Channel to other countries.

A motion by Dr. H. G. DAIN that the question should be referred back to Council was withdrawn in consideration of the fact that this matter had now been under discussion for two years and that inquiries made at the office on the position taken by the Association with regard to patents had to be met by quoting a ruling which no longer expressed the view of the Representative Body. Sir Robert Bolam's amendment was finally accepted with the deletion of the words "by patent or otherwise," though Mr. N. BISHOP HARMAN thought it modified and weakened the phrase "unduly restricting." As the amendment was carried as a substantive motion with more than a two-thirds majority, it was substituted in the policy of the Association for the 1920 decision, under which all patenting of medical or surgical discoveries had been condemned.

Cremation Certificates.

A proposal was introduced by Dr. J. W. BONE to the effect that fees for completing Form B under the Cremation Act should be a matter of private arrangement between the doctor and relatives concerned, and that the fee for the completion of Form C should be not less than one guinea except where the total family income does not exceed £250 per annum, when the fee should be not less than 10*s.* 6*d.*—An amendment was introduced by Dr. F. H. BODMAN, for Bristol, requiring that the reduced fee of 10*s.* 6*d.* should be deleted. He pointed out that trade unions spent nearly half a million last year on funeral benefits, and inferred that they could therefore afford to pay a guinea to the doctor.—He was supported by Dr. PETER MACDONALD, for York, who thought that the reduced fee was not adequate either to the work or the responsibility involved. In cases of cremation the general practitioner was the final authority in deciding whether there was or was not evidence of crime; this responsibility was equally great whatever the income of the family. He quoted some interesting figures, obtained from an undertaker, which went to show that the funeral expenses in cases of cremation were sufficiently high to make the fee of the medical practitioner negligible, and therefore to justify the maintenance of a guinea fee.—Dr. Bodman's amendment was accepted.

Recommendations under Mental Treatment Act.

A similar difficulty arose in regard to the motion introduced by Dr. BONE to the effect that in cases where a recommendation was made under the Mental Treatment Act for a private patient, the fee should be a matter of arrangement between the relatives and the practitioner concerned, but that in public assistance cases the fee generally recognised by assistance authorities for certificates under the Lunacy and Mental Deficiency Acts (namely, one guinea) would appear to be appropriate.—Here it was pointed out by Dr. H. W. POOLER, for Chesterfield, that certain public assistance authorities were at present paying two guineas.—Dr. G. DOUGAN, of Portadown and West Down, said that this very difficulty had been the ground for a fierce battle in his own district, and that the fee had now been stabilised at 30*s.* If it was to be standardised by the Association at a guinea the old war would be reopened.—Dr. WEST WATSON, of Bradford, pointed out that in some districts the fee was at present only 10*s.* 6*d.*, and in this he was corroborated by Dr. Bone.—It was finally agreed that any reference to the public assistance authorities should be omitted and that the motion should state that in public assistance cases a fee of not less than one guinea would appear to be appropriate.

Road Accidents.

Dr. E. R. FOTHERGILL (Brighton), for the Kent Branch, proposed that the Council should consider what practical steps, if any, could be taken to ensure that a fee should be paid to medical practitioners who were called to street accidents. The Medico-Political Committee, he said, had tried to find a solution of this difficulty, but so far without success. If the medical profession made a united claim for such fees the approved societies would probably arrange to pay a nominal sum.

Dr. B. H. PAIN said that at present 80 per cent. of doctors failed to get their fee for accident cases. The Road Traffic Act contained a clause which made it compulsory for persons meeting with road accidents to notify the police and to give the name and address of the damaged party, as well as the name of the doctor who attended him. He suggested a plan by which any doctor should be able, on attending a road accident, to hand in his name to the police. The insurance companies would be in a position to obtain a copy of the police report which would contain a statement of the fee asked by the doctor. Since insurance against third party risks was now compulsory the insurance company would pay the doctor's fee. He proposed that the doctor should be supplied with two postcards, one of which would be sent direct to the police and the other to an independent body, possibly associated with an Accident Branch of the B.M.A. Such an independent body might be able to enforce his claim through a debt-collecting agency. Under the Road Traffic Act a hospital received up to £25 for treating cases of accident, but the doctor received nothing.

Dr. T. OWEN NASH thought it useless for the doctor to try to obtain a fee except by means of insurance. Many accidents occurred to pillion riders and to motor cyclists buying their machines on the hire-purchase system, who were often in no position to pay a fee. Unless legislation on an insurance plan could be established it would be impossible to secure payment.

Mr. W. MCADAM ECCLES said that the claims for accidents were already enormous, and when he pressed for the payment of the doctor rendering first-aid, insurance companies were apt to ask why the medical profession had not insisted, like the hospitals, in being included in the Road Traffic Act. The difficulty was that the profession was not united in its demand for a fee. The injured person was only too glad to recover his health quickly as the result of effective first-aid, and the insurance companies profited by the frequent avoidance of severe disabilities, owing to skilled attention by the doctor first called to the accident. He was sure that the insurance companies could not only afford to pay a fee to the doctor, but would be ready to do so in view of the fact that his initial treatment saved them heavy expenses.—Mr. Eccles was supported by Dr. WEST WATSON, but Dr. H. R. FREDERICK, of Swansea, pointed out that a large number of accidents occurred to insured persons who were in any case entitled to emergency treatment without fee.

Dr. JAMES MILLER referred to the arrangement suggested in a circular of the Ministry of Health, by which a fee of 7*s.* 6*d.* for a day call, and 10*s.* 6*d.* for a night call, was supposed to be paid when the

police sent for the doctor in case of accident. He had found that out of 61 police forces in the country only 29 had agreed to this arrangement. The Medico-Political Committee had pointed out when the Road Traffic Act was before Parliament that the doctor should receive a fee as well as the hospital, but they had been told the doctor was in a position to sue for his fees while the hospital was not. He thought the best plan would be to take up the matter locally and to try to get the police forces to agree to pay a fee when they were responsible for calling a doctor. In other cases the local authority should be persuaded to pay a fee, if possible; in his district the local authority had agreed to pay the doctor's fee in all road accidents except those occurring to insured persons.

Dr. BONE admitted that he had acquired more constructive proposals from the discussion than he had anticipated. Dr. Fothergill had forgotten to point out that in Brighton an effective scheme was in force by which every policeman carried a voucher which he handed to the doctor; on presentation of this voucher the Brighton town council paid the fee. He believed there were similar schemes in operation in Willesden and Gateshead. The branches and divisions of the Association should try to induce their local authorities to adopt some plan of the kind.

Dr. Fothergill's proposal was adopted without contrary vote by the meeting.

Additional Benefits and Approved Societies.

Dr. DAIN (chairman of the Insurance Acts Committee) moved a resolution that the Association would deprecate medical practitioners taking service under any scheme for the provision of additional treatment benefits which would bring them directly or indirectly under the control of approved societies. This attitude with regard to the approved societies, he said, was one of the cardinal principles enunciated by the Association in 1911 and 1912. Additional treatment benefits had varied under the different societies, depending on the surplus which each possessed, and had so far taken the form of a sum of money given to the patient for the necessary treatment; but it was not to the advantage of either the patient or the doctor that in any organised scheme for the provision of additional benefits the approved societies should have complete control.—In this view the meeting supported him with the alteration proposed by Hampstead, that "would deprecate" should be replaced by "disapproves of."

Two other motions introduced by Dr. DAIN were carried without discussion. The first related to additional treatment benefits 8 and 16, and proposed that services of a specialist or consultant nature should be given, so far as was consistent with the best interests of the patient, by a private practitioner at his consulting rooms, the patient's own home, or at clinics specially established for the purpose. The second provided that under additional benefit 10, where the patient was referred to hospital for treatment, the choice of hospital should lie with the doctor and patient, and not with the approved societies.

Choice and Change of Doctor.

Dr. DAIN said that the Association still objected to the new arrangements for change of doctor. At present the patient could only change his doctor once a quarter, and then only on giving a month's notice. This was against the principle of free choice, as well as being against the best interests of the patient. A number of difficulties were already arising; although the patient could, with the consent of both doctors, change at a moment's notice, he was usually loath to ask the practitioner with whom he was dissatisfied to sign the necessary paper, and as things stood he might be compelled to pay fees to the new doctor of his choice for three months before he could obtain a transfer. The patient was entitled to free treatment, and panel practitioners were prepared to give it, but this regulation could rule the patient out of the right to receive service for three months.

Dr. A. B. MURRAY (Banff, Moray and Nairn), introduced a resolution protesting against any interference with the liberty of the insured person to change his doctor when he so desired. The Association had always held the free choice of doctor to be a cardinal point in their policy. He mentioned a case in which the patient had wished to change his doctor one month before the quarter, but had been too late to give in his notice. As a result he had to pay fees for four months before he could change.—Dr. BRACKENBURY seconded the amendment. If the approved societies and the Ministry of Health were not going to support this cardinal principle the only remedy for the profession was to seek the weight of public opinion. The insured patient should be as far as possible in exactly the same position as the private patient. Approved societies in the interests of finance had curbed the freedom with which the insured person could change his doctor. It was a serious inroad on the rights of the patient. The opposition which the Association had always given to such limitation of freedom was in the interests, not of the doctor, but of the patient. The present system gave the doctor a vested right in the patient for a given period and this was wholly undesirable.—Dr. FOTHERGILL assured the meeting that in East Sussex and Brighton these draft regulations had been completely ignored. They had been promulgated in February but had never been confirmed.

Some opposition to the amendment was introduced by Dr. J. FORRESTER. He was somewhat embittered in the view he took of the case owing to an encounter with a patient who had changed his panel doctor five times in fourteen days.—He was supported by Dr. G. F. P. GIBBONS, who thought a sentimental attitude had been allowed to creep in with regard to the unfettered choice of doctor by the patient. In times of industrial depression patients were apt to "go sick" with undue frequency, and if they could not obtain certificates from their own practitioners they would go to less scrupulous doctors while they were in a position to transfer as frequently as they pleased.—Dr. D. F. TODD and Dr. R. D. MOTHERSOLE shared this view.—Dr. F. J. KERR thought that on this question the Association had an excellent opportunity to defy the Ministry in the interests of the patient.—Dr. E. STUNGO (Lambeth) put the position for free choice neatly. If the patient was genuinely dissatisfied he surely had a perfect right to change his doctor at once; if he was one of the disgruntled type who had no faith in any doctor, his practitioner would be only too glad to get rid of him.

Dr. DAIN considered that the present position did not actually abuse the principle of free choice; it had merely reduced considerably the opportunities for employing it. He did not think, however, that a crusade in which all insurance practitioners should go to the length of resigning in order to enforce the principle was appropriate or necessary at the present time.

Dr. Murray's resolution was carried.

Dividends and Gifts from Pharmacists.

Mr. F. C. PYBUS, for Newcastle-on-Tyne, moved that the meeting was strongly opposed to the offer of any reward or dividend by chemists, as an inducement to an insured person to bring his prescriptions to be dispensed. In his district, he said, there was a tendency for insurance patients to have their prescriptions made up at the coöperative chemists rather than at the private chemists.—Dr. R. BOYD (Manchester) had also found that where the coöperative system was in operation the number of attendances at the surgery and the number of evening calls increased. The chemists had offered dividends to the patients in the form of cash, soap, and other commodities, to the detriment of both the drug fund and the general practitioner. It was not so long since medical attendance was given away with a pound of tea, and a time might yet come when patients would collect their panel prescriptions—50 for a gramophone, 100 for a wireless set.—Dr. DAIN said that it was not legal for chemists to give bonuses, but that the position was the responsibility of the pharmacists and had nothing to do with the Association. The insurance committees were beginning to say that any bonuses which were given should belong to them.

The motion was carried without dissent.

Ophthalmic Service.

Mr. BISHOP HARMAN said that it was within the knowledge of the Council that a few ophthalmic surgeons had been giving lectures to meetings of sight-testing opticians' organisations. The Association had always held the view that sight-testing by other than qualified medical practitioners was not in the best interests of the patient, and he therefore moved that a registered medical practitioner should not take part in the instruction or examination of opticians or student-opticians in clinical ophthalmology.—Dr. F. A. ROPER thought the motion liable to misconstruction. Science was universal, and any refusal to disseminate knowledge should be preceded by an explanatory phrase. He suggested that the motion should state that, in view of the opinion of the Association that the practice of sight-testing by other than qualified medical practitioners was not in the best interests of the public, the Association considered that a registered medical practitioner should take no part in the instruction or examination of opticians or student-opticians in clinical ophthalmology.—This expression of opinion was supported by the meeting.

Mr. BISHOP HARMAN gave a brief history of the National Ophthalmic Treatment Board scheme, which has now been running for two and a half years. Clinics, he said, were now held in a large number of towns in England and a few in Scotland and Wales. Those eligible for treatment were insured persons and their dependents and those families with an income of less than £250 per annum; a fee of 10*s*. 6*d*. was charged by the ophthalmic surgeon visited, and for this sum he gave all the advice possible at the first consultation. Although the scheme was still run at a loss there was every hope that it would be self-supporting next year.—Certain speakers, including Dr. CAMPBELL ORR, spoke in favour of the scheme, but a motion was introduced by Dr. E. E. BRIERLEY, for Cardiff, that the general practitioner should be allowed to send his patients directly to the ophthalmic surgeon and not, as at present arranged under the scheme, to a dispensing optician at the clinic.—In this he was heartily supported by Dr. HELEN LUKIS (Kingston-on-Thames). In her area, she said, the scheme had been a failure. The dispensing optician attended at the clinic for two hours twice a week. It was impossible for an insured patient to be sure of being able to attend at those times, and dangerous delay might further be introduced, in an acute case, by the difficulty of making a telephone appointment with the ophthalmic specialist.—Mr. BISHOP HARMAN, in replying, expressed his sympathy with the Cardiff motion, but said that at present employment of a dispensing optician in the scheme was necessary; his duty was to save the ophthalmic surgeon all office work, and he was there solely as a clerk; he had no right to direct either the patient or the doctor in their choice of ophthalmologist.

On the suggestion of Dr. BRACKENBURY, the meeting passed to the next business, since it was felt that though a more direct service between the doctor and the ophthalmic surgeon was desirable it could not be achieved in the present early stages of the scheme.

Development of Public Health Services.

Dr. E. K. LE FLEMING (Bournemouth) referred to the position of the public health services throughout the country under the Local Government Act of 1929. In many areas the local authorities had been unwilling to do more than take over the poor-law duties and administer them without alteration. He proposed that the Council might ascertain and report on three aspects of the progress shown by local authorities—namely, in arranging the unification of health services, the better coöperation between municipal and voluntary hospitals, and the position of the medical officer of health in relation to the local authority and its health services.—Dr. BRACKENBURY thought it would be useful to describe the present deadlock to the meeting from another angle. It was almost wholly owing to the representation of the Association that it had been recognised that the medical officer of health of an authority should also be the medical officer to the public assistance committee. It had been indicated by the Ministry of Health along what lines it was desirable for the local authorities to extend their activities, but the Ministry would now have to wait until schemes were submitted for sanction by these authorities before taking further steps. Until such schemes were submitted it was impossible to criticise existing arrangements. In addition, the Ministry had appointed inspectors in some areas to report on the health services, and action, of course, could be taken based on those reports. But relatively few authorities had so far submitted schemes to the Ministry and consequently information on progress in the country as a whole was meagre.—Dr. R. M. F. PICKEN (Cardiff) said that most of the authorities who intended to submit schemes had done so already, and that many of them did not provide for satisfactory unification of health services. The longer the Association waited without taking action the more difficult it would become to get the position changed. It was true that the joint efforts of the Association and the Society of Medical Officers of Health had done something to standardise the relation of the medical officer of health to the public assistance committees. But his status was only that of medical adviser to the committee, and not medical officer. Consequently, administration of health services was not necessarily in the hands of the medical officer of health. The meeting supported Dr. Le Fleming.

Payment of Hospital Staffs.

A resolution was moved by Sir RICHARD LUCE, on behalf of the Council, that where a voluntary hospital gave in-patient treatment to patients for

whom the local authority accepted financial responsibility, the members of the visiting staff of the voluntary hospital should be remunerated. He suggested that the local authority should pay to the hospital the maintenance cost of each patient plus an addition of one-quarter for medical services, and that of the total sum received 20 per cent. should be allocated to the visiting medical staff.

Considerable discussion followed. Dr. H. H. MACWILLIAM doubted whether the Committee would be able to arrange for such a proposal to be carried out, and Sir EWEN MACLEAN thought that opposition would be more likely to come from the governing bodies of the voluntary hospitals than the local authorities. It would be useful to find out, he considered, what schemes of this kind were already in operation.—Dr. PETER MACDONALD thought it was a pity to hesitate over a new policy by stopping to inquire what was in practice in other areas. This was a matter for the education of hospital authorities and there was no reason why it should not become acceptable throughout the country.—Dr. T. W. WADSWORTH feared that to ask for 20 per cent. was to ask for too much, but Sir ROBERT BOLAM thought this was a very reasonable sum. The working-man governor of a hospital would be willing to recognise that the labourer was worthy of his hire and, though he might bargain shrewdly, would be willing to pay something. The demand was a reasonable one and should be pressed for.—Dr. J. LIVINGSTONE (Barrow-in-Furness) had had a different experience. He had found that hospital governors were ready to admit that the labourer was worthy of his hire, but that they had no intention of giving it.—Dr. J. T. D. EWART described an anomalous case in which the Hospital Saturday Fund had to pay 10s. for admission of a patient to the voluntary hospital and £1 for his admission to the municipal hospital. The medical profession wished the patient to have free choice of hospital, and he thought that if a position was reached in which the voluntary asked more than the municipal hospital, the local authorities might refuse to send their patients to the voluntary hospital. He warned the meeting against over-emphasis of the financial aspect.—Dr. F. A. ROPER, Dr. MIDDLETON MARTIN (Gloucester), and Dr. F. RADCLIFFE (Oldham) thought it undesirable to go back on the motion, as it would weaken the position of the staff in hospitals where the principle of payment had already been accepted.—Sir RICHARD LUCE said that where voluntary hospitals were being used as a convenience by municipal authorities there was no question but that they should pay a reasonable sum for their patients, and the meeting approved that view.

The Problem of the Out-patient.

An active discussion followed the proposal in the Report of the Hospitals Committee on the Problem of the Out-patient, that the types of cases in out-patient departments fall properly into three groups—viz., casualty cases, consultation cases, including those retained for special treatment, and discharged in-patients.

Sir RICHARD LUCE, who moved the acceptance of the report, said that at present out-patient departments were wasteful, and growing in rapid excess of the growth of population. Discharged in-patients and chronic cases should be referred back to the doctor. It should be realised that an out-patient department was a place primarily intended to give emergency treatment and to provide consultation and specialist opinion, and it should not be used as a dispensary for chronic patients.

Sir ERNEST GRAHAM-LITTLE doubted whether it was the proper time to bring this motion forward, since it could not possibly be realised, and he moved that the report should not be approved. He asked whether the Council had considered carefully the composition of out-patient departments before saying that certain patients should not attend. The National Health Insurance Act had made no more than a temporary difference to the attendance at out-patient departments and the inference was that a certain number of insured persons went to hospital. In Guy's Hospital report for last year it was stated that 40 per cent. of out-patients came as consultation cases; of the remainder a considerable proportion were the non-insurable dependents of insured persons, and a certain section consisted of the new poor of the middle classes. It must be remembered that in many cases three-quarters of the hospital expenses were defrayed by associations corresponding to the Hospital Saving Association. If the public gained the idea that an arrangement had been made by private practitioners by which the patient could be prevented from going to hospital without his doctor's permission there would be considerable objection. The hospitals belonged to the public and the private practitioner should not be allowed to choose what cases should attend them.

Mr. H. S. SOUTAR thought Sir Ernest Graham-Little had somehow acquired a false idea of the object of the report, and he was glad that the Association now had the opportunity of rectifying it. The out-patient department should be the main point of contact between the general practitioner and the hospital, and the whole object of the report was to encourage patients to go to hospital and to make the conditions of their reception more favourable. It made all the difference to a patient attending hospital if he could produce a doctor's letter recommending him for treatment. The body of general practitioners in this country wished the hospital out-patient departments to be the consultative service of the State. The intention was not to protect the general practitioner but to make the out-patient departments more effective and to give the best service to the patient.—He was supported by Mr. MCADAM ECCLES, who thought that the present overcrowding was easily preventible; the chronic ordinary type of case should be seen once, diagnosed, and sent back to the proper official for treatment. The veteran of 60 or 70 attendances should no longer appear at the out-patient department.

Dr. H. D. WOODROFFE felt that patients as a whole were not out for something for nothing; where they could spare a fee for a consultant they were ready to pay it, and maintained their self-respect by making the effort. Out-patient departments should provide a consultative service for those who could not afford to pay for it.—Sir ROBERT BOLAM also emphasised the folly of wasting the service of out-patient departments by allowing them to be overburdened with chronic cases. The day had gone when the length of the list of out-patients treated was regarded as an index of the value of a hospital.

Sir ERNEST GRAHAM-LITTLE'S proposal that the report should not be adopted was lost by a large majority. *(To be continued.)*

ENLARGEMENT OF ARBROATH INFIRMARY.—Sir John Cargill has now formally opened new wings which have been added to this hospital. The extensions, which have cost £17,680, include a children's ward and the enlargement of the nurses' quarters. The children's wing contains ten beds and two private wards. An old block has been converted into private wards, rooms for the resident medical staff, and a lecture hall.

MEDICINE AND THE LAW.

Industrial Disease Compensation: a Delayed Claim.

In a Workmen's Compensation Act appeal, lately dealt with by the House of Lords, Lord Blanesburgh remarked of a certifying surgeon that "so far as professional skill was concerned he adequately filled his post, but as the filler up of a form he had shown himself a blunderer." The comment was not intended harshly. Learned judges are aware that accuracy and success in the filling up of forms are not automatic; they themselves have occasionally revealed inability to complete a printed will form so as to make a valid testamentary disposition of their property. The case before the House of Lords, however, displayed an unusual sequence of errors. First of all, the certifying surgeon, having to certify an industrial disease case, filled up the certificate with the wrong disease—or rather he described the disease as "epithelioma of the scrotum" instead of using the exact description from the statutory list of industrial diseases. Secondly, when faced with the words in the form, "I hereby certify that the disablement commenced on the —— day," he neither filled in the blank nor crossed out the sentence (as the form required him to do if the blank were not filled). This omission left it uncertain whether he meant to specify a date or to let the date of the certificate stand (under Section 43 (2) of the 1925 Act) as the date of disablement. The Act treats the date of disablement from an industrial disease as if it were the happening of an accident for which the workman can recover compensation. Section 14 of the Act stipulates that the employer must have notice of the workman's claim within six months. Here the certificate (the basis of the claim for compensation for the industrial disease) was dated July 24th, 1929; but that date was more than 12 months later than the date on which the workman left the employers' service. He had been an operative cotton spinner; the employers had closed down their works entirely on June 13th, 1928, and the man had not been employed since then. The firm repudiated liability on the ground that the claim was out of date. Three months later the trade union agent, acting for the workman, applied for a fresh certificate. The certifying surgeon thereupon examined the man again and sent another certificate, but made yet another mistake in filling up the form. He correctly described the industrial disease, but the date of disablement was specified as "the 22nd day of 1929," no month being inserted. After further correspondence, the certificate came back complete at last; it was dated Jan. 18th, 1930, and it specified the date of disablement as "the 22nd day of May, 1929." The claim, having thus been made as on Jan. 18th, 1930, was out of time; but the Act contains a proviso (to Section 14) safeguarding cases where the failure to make a claim within the time-limit is found due to "mistake, absence from the United Kingdom, or other reasonable cause." Did the facts of the case amount to "reasonable cause" for the delay? The House of Lords has answered "Yes." So the workman, suffering from epitheliomatous cancer after 17 years as a cotton spinner, fortunately does not lose his statutory compensation by reason of the errors which contributed to the delay in making the claim. But it is to be understood that Parliament intended the time limit to be some protection to the employers against improper claims; and Lord Blanesburgh adds the warning that the recent decision is not to be taken to countenance the workman "sitting on in the knowledge that he has contracted a disease and doing nothing to make good his claim."

B.M.A. Action against Drug Stores.

In the Chancery Division, on July 15th, the British Medical Association obtained an injunction against a defendant, trading in South-East London, who offered for sale drugs and medical remedies bearing the letters "B.M.A.," and who called his business the "B.M.A. Drug Stores." The defendant argued that "B.M.A." did not necessarily or exclusively denote the British Medical Association, and that he was entitled to use the letters. Mr. Justice Maugham, however, was satisfied that the acts of the defendant tended to injure the Association as being likely to cause its existing members to leave it and its prospective members to abstain from joining it. The Association was a purely voluntary body, dependent on subscriptions. People who saw the words "B.M.A. Drug Stores," or the defendant's shop-windows, might think—and ordinary members of the public would think—that the British Medical Association was somehow connected with the shops. The case resembled the proceedings on July 13th before Mr. Justice Farwell, wherein the British Legion complained that a company called the British Legion Club (Street), Ltd., was conducting a club at Street, in Somerset, which owed no allegiance to the British Legion; the members of the club were to be ex-Service men or other persons over age; there was no requirement that the members should be members of the British Legion. The defendant company answered that it had been incorporated in 1921, whereas the British Legion was not incorporated as such by Royal Charter until 1925. The judge said the name of "British Legion" was well known in 1922, and it was a fallacy to say that a voluntary association could not assert its right to the name; there was clearly a possibility of confusion even if there was no actual evidence. Both the British Legion and the British Medical Association succeeded in obtaining the injunction desired.

A HOSPITAL TRIBUTE.—Sir Henry Dickens, Common Sergeant of the City of London, recently unveiled, in the male ward of the Passmore Edwards Hospital, a bronze tablet in recognition of the work of the Dickens Players, of Bowes Park, who have substantially helped the hospital by their performances.

COMPULSORY VACCINATION.—Mr. Arthur Greenwood, the Minister of Health, on July 15th received a deputation of Members of Parliament who urged that compulsory vaccination should be abolished, and expressed a hope that the Government would introduce, or give facilities for the necessary legislation. They believed that all they wanted could be achieved by a one-clause Bill. The Minister said that he was bound to administer the law as it stood. The effect of the Local Government Act had been to place the administration of the Vaccination Acts in the hands of the larger local authorities, and he did not contemplate any drastic amendment of the law until those authorities had had time to gain experience of the operation of the Acts in force and furnish him with their views and advice. He believed that complicated and highly controversial legislation would be necessary to secure what the deputation desired. He must, in present circumstances, prefer the claims of other legislation to those of a Vaccination Bill. While, therefore, he could have no objection to the introduction of a Private Member's Bill as a means of testing public opinion, he could give no assurances either of support for such a Bill or of the introduction at an early date of Government legislation.

REVIEWS AND NOTICES OF BOOKS

The Histopathology of Skin Diseases.

By LEE MCCARTHY, M.D., Associate Clinical Professor of Dermatology, Georgetown University Medical School, &c. London: Henry Kimpton. 1931. Pp. 513. With 250 illustrations, 54 in colour. £5 5*s*.

THIS magnificent volume represents the first serious attempt to produce an original text-book of cutaneous histology in the English language. It has been crowned with success, for the illustrations are superb, and the author has succeeded in compressing the rather diffuse descriptive material into its important essentials. The result is, however, much more than a catalogue. By incorporating a brief clinical description of each morbid condition, he has succeeded in enlisting the reader's interest in the detailed histology, and has given vitality to a subject which has always suffered from the reproach of dullness. The work contains chapters on the normal anatomy of the skin and its appendages, pigmentation, atrophies, hypertrophies, acute and chronic inflammations, tumours, the dermatomycoses, and blood diseases. A complete chapter—as is only fitting, for much of the original work was done in America—is devoted to the precancerous dermatoses. In his description of diseases in which the ætiology is obscure or controversial, Dr. McCarthy maintains a neutral attitude. This policy is well illustrated by the section on lupus erythematosus. The present position is ably summarised in a few lines: "Although no definite proofs have been advanced to prove the tuberculous origin of the disease, most investigators are agreed that it is in some way intimately connected with tuberculosis. At the present time nothing more definite can be said." Again, "it should be mentioned that the histological picture of L.E. does not reveal even the slightest similarity to that of tuberculosis of the skin. . . ." He is careful to avoid the temptation to enter into a dissertation on a question which has troubled the world of dermatology for a decade.

The difficulties of nomenclature in the group of parapsoriasis are dispelled by a neatly tabulated list of equivalents according to the French and German schools; the various synonyms which have greatly added to the confusion surrounding this group are also tabulated and will be found of much value. Mycosis fungoides is classified with the skin manifestations in diseases of the blood, such as myeloid and lymphatic leukæmia. Some beautiful microscopical illustrations amplify the description of this fatal disease, and make it easy to realise and remember the salient features of the three accepted stages. In the same chapter it is suggested that in many cases originally described under the name pityriasis rubra of Hebra the diagnosis was not confirmed by blood counts; such cases may indicate only a sign or symptom such as universal erythrodermia, and not a disease sui generis. Earlier writers may have included such various entities as mycosis fungoides, lymphatic erythrodermia, or tuberculosis in the same group. This work is likely to remain a standard text-book of the histopathology of the skin in the English language until the science of histology itself gives place to new methods of cutaneous investigation. Its appearance is an event in dermatological literature for which the specialist will be grateful.

Backache.

By JAMES MENNELL, M.D., Medical Officer, Physicotherapeutic Department, St. Thomas's Hospital. London: J. and A. Churchill. 1931. Pp. 190. 10*s*. 6*d*.

FEW symptoms are more baffling than backache, or, in spite of its common occurrence, more inadequately dealt with in ordinary surgical text-books. Dr. Mennell has written a very useful little book on the subject. He says in the preface that he was prompted to undertake this task because "of the injustice of the judgment formed, in the early period of my study of backache, that all patients grossly exaggerated their symptoms and that the symptoms themselves were, to a great extent, neurasthenic." The tendency to regard these sufferings lightly is still too prevalent, and it is this attitude that leads a patient to seek relief at the hands of unqualified practitioners, often without the knowledge and against the advice of his own doctor. When one reflects that the text-books used by those who qualified some 10–20 years ago devoted more attention to "railway spine" than to the strains of the sacro-iliac joints, little blame can be attached to the doctor for his failure to appreciate how much can be done to-day, by orthopædic methods, to relieve backache. Dr. Mennell has not attempted to compile a big thesis, embodying the views of other authors, but contents himself with a clear, simple, and short account, illustrated by admirable diagrams, of the results of his own wide experience. Throughout he keeps in view the needs of the general practitioner, and the book is so arranged that, except for one important omission noted below, information on any particular point can be found without reading through the whole book. This monograph should find a place in the libraries of all practitioners, for it is only by acquainting them, and through them the general public, with the aims and methods of the orthopædic surgeons and physicians that the glamour and mystery surrounding the practices of the unqualified bone-setter can be removed. The omission of a substantial section on backache associated with childbirth mars the book. Dr. Mennell mentions this aspect of the subject only patchily and rather by implication. The symptom is so tiresome and so common, both before and after labour, that the practitioner might reasonably expect to find a fuller discussion of it in a work of this kind. Not even under the headings of childbirth, labour, post-partum, pregnancy, or sacro-iliac joint is there any reference made to it in the index. This is the only serious fault we have to find, and one which can easily be made good in future editions.

Hay-Fever, Hay-Asthma.

Its Causes, Diagnosis, and Treatment. Third edition. By WILLIAM LLOYD, F.R.C.S., late Surgeon in Charge of the Nose, Ear, and Throat Department, Kensington General Hospital. London: Straker Brothers, Ltd. 1931. Pp. 124.

THE last edition of this book was published 23 years ago. The first chapter consists of a review of opinions on the exciting causes of hay-fever, but the more recent work on protein sensitisation is not discussed. The second chapter is on the

predisposing causes, the third on the symptoms, and the fourth on the treatment of hay-fever. The treatment advised by Mr. Lloyd consists chiefly in the removal, if present, of intranasal abnormalities, the cauterisation of hypersensitive areas, and the application of astringent lotions. The author does not appear to believe in individual idiosyncrasy to animal exhalations, which is generally regarded as an important factor in many cases of asthma.

A Text-book of Surgery.

By JOHN HOMANS, M.D. London: Baillière, Tindall and Cox. 1931. Pp. 1195. 40*s*.

THIS book is really a series of lectures for undergraduate students. It is perhaps a little uneven, and its recommendations are not quite explicit enough. It is well to instil principles, but the student will want to know more, for example, that the mere fact that iodine should be administered before operation for exophthalmic goitre. He will want to know how to give the drug, and in what dosage. Dr. Homans writes with an easy style, and an attractive feature of his book is the return to line drawings for purposes of illustration. The pictures are well executed and much more expressive than many of the photographs it is now customary to provide in modern text-books. At the end of the book the names of all the authors who have been mentioned in the text are placed in alphabetical order with references to their original work.

Trial of Alfred Arthur Rouse.

Notable British Trials. Edited by HELENA NORMANTON, Barrister-at-Law. Edinburgh and London: Wm. Hodge and Co. 1931. Pp. 316. 10*s*. 6*d*.

THE trial of Rouse for the so-called "blazing car murder" had no conspicuous medico-legal interest. The Crown claimed to establish that the fire was not accidental and that the charred body could not have got into the position in which the victim died unless placed there while he was unconscious. On the former point the evidence of mechanical engineers was important; on the latter that of Sir Bernard Spilsbury. The presence of a single human hair on the mallet found 14 yards from the burnt car was not stressed. Rouse's own behaviour and statements (both before and during the trial) contributed largely to his conviction. Mrs. Helena Normanton, who edits the case in the Notable British Trials series, tells the story in a comprehensive introduction with dramatic gestures and moral reflections perhaps not inappropriate. In an Appendix she gives significant extracts from Rouse's medical records; he was wounded in the head at Givenchy. She also prints, and shows faith in, Rouse's confession as published in a newspaper on the day after his execution. One statement therein confirms a rumour current in the Temple at the time. "In my attaché case," he wrote, "was my identity disc, which the police have; I intended to put it on the man in the car so that people would think it was me; I forgot to do so." His wife's statement to the police, not yet released by the Home Office for publication, might be a crucial document. Rouse visited her before 7 A.M., a few hours after the car was burnt; later in the day the police took her to attempt identification of the remains. She was not called as a witness by her husband, nor did the judge comment on the omission.

One striking feature of the case was the total failure to identify the dead man; at first the body was thought to be that of a woman. In the preliminary proceedings before the magistrates, several women were called to speak of their relations with Rouse, and a police officer quoted his statement "my harem takes me to several places." Early and widely published, this evidence (subsequently excluded at the trial as irrelevant) alienated popular sympathy from the accused. His counsel could fairly complain that it prejudiced his chance of a fair trial. It seems odd, indeed, that magistrates, when investigating what is obviously a grave charge beyond their summary powers, cannot limit the inquiry to the minimum necessary for deciding whether or no there is a prima-facie case for committing the accused for trial. Perhaps by the fault of the prosecution or by that of the defence, magisterial proceedings are often far too long. It is, however, as Mr. Justice Avory observed on the appeal, difficult to say, when an accused person makes a statement derogatory to himself, whether it may not have some object connected with the defence. The Court of Criminal Appeal found no cause to disturb the result of the trial. Much comment on the case was published in the newspapers between trial and appeal. Is such publication contempt of court when there is no longer a jury to be influenced thereby? Lord Hewart's warning suggested that the answer might be in the affirmative.

The Physical and Radiological Examination of the Lungs.

Second edition. By JAMES CROCKET, M.D., D.P.H., F.R.C.P.E., Lecturer on Tuberculosis, Glasgow University; Visiting Physician, formerly Medical Superintendent, Consumption Sanatorium of Scotland, Bridge of Weir, &c. London: H. K. Lewis and Co., Ltd. 1931. Pp. 296. With 151 illustrations, including 40 plates. 16*s*.

THIS book has been largely rewritten since the first edition appeared nine years ago, even the title having been changed. For the student it is an excellent text-book, since stress is laid on the importance of giving due weight to the smallest detail of physical examination. A chapter deals with the measurements of the chest, vital capacity, and various tests of respiratory force; tables are given showing the average weight, measurement, and vital capacity of the normal individual. A very full chapter describes the X ray examination of the lungs. It is satisfactory to observe that adequate space has been devoted to the X ray appearances of the healthy lung, and the student is told what shadows may be regarded as normal. Bronchoscopic examination and the examination of the larynx is also described. At the end of the book is a glossary of terms used in connexion with the examination of the lungs. Some of these are helpful, but it is a pity that so many different signs, each bearing the name of its inventor, should be given. It is puzzling for the student to try to remember proper names, and he should not be worried with those which have no real value.

Several classifications of pulmonary tuberculosis are set out; the one used by the author is a modification of the Turban-Gerhardt classification, which shows not only the degree of systemic involvement, but also the presence of complications, such as laryngitis, and whether or not a large number of tubercle bacilli are present. The book is well-produced and illustrated.

THE LANCET.

LONDON: SATURDAY, JULY 25, 1931.

VACCINE PROPHYLAXIS IN PNEUMONIA.

PNEUMONIA has been responsible for a higher morbidity- and mortality-rate than any other disease among the native labourers employed in the gold-mining industry on the Witwatersrand in the Transvaal. In 1911, the first year for which reliable statistics are available, the mortality among the natives from pneumonia was 12 per 1000, the total mortality from all diseases being about 30 per 1000. Recognising the seriousness of the situation, the responsible heads of the gold-mining industry invited Sir ALMROTH WRIGHT to investigate the problem, and experiments under his direction were carried out from the middle of 1911 to the end of 1912. As the result of the work of WRIGHT and his colleagues, and the further observations of Sir SPENCER LISTER, the controllers of the industry were convinced of the value of prophylactic inoculation against pneumonia, and in 1917 it was made practically compulsory for the native labourers throughout the Witwatersrand. The composition and dosage of the vaccine employed was naturally altered from time to time in the earlier years, but it now consists of eight types, a 1000 millions of each constituting a dose; three doses are given at weekly intervals.

For several years, therefore, prophylactic vaccination against pneumonia has been generally regarded as an established procedure which has passed beyond the realms of controversy, but a stimulating paper, recently published by Dr. A. J. ORENSTEIN, Head of the Department of Sanitation, Central Mining, Rand Mines Group, Johannesburg,[1] once more throws the whole matter open to discussion. Briefly, Dr. ORENSTEIN has reached the conclusion that there is no satisfactory evidence that inoculation is of real value in the prevention of pneumonia. The two major experiments carried out by WRIGHT and his colleagues were submitted to statistical investigation by the late Dr. G. D. MAYNARD, who came to the conclusion that for a variety of reasons they furnished no satisfactory evidence that the case-mortality was favourably influenced; and that, although the attack-rate, especially during the first month of inoculation, was apparently lessened, the protective effects diminished until none was left after the fourth month. He also pointed out that the apparent protection seemed to extend to respiratory diseases other than pneumonia. Two further experiments carried out about this time were also unfavourably criticised by Dr. MAYNARD. In one, the 20,000 natives, subjected to the experiment included East Coast, Basuto, and "tropical" natives, who were not represented in the previous experiments; the other was carried out at the Premier Diamond Mine, which differs from the gold mines in being an open pit. Still another experiment, "Experiment No. 3," was started by Sir SPENCER LISTER in 1914. This covered 55,900 natives of various tribes, one-half of whom were inoculated and the other half left as controls. The inoculated natives gave a case-rate of 16·4 per 1000 and the uninoculated 20·6 per 1000, which suggests that the treatment had a definite value. There has, however, been a gradual increase in the death-rate from pneumonia among the natives on the Rand since 1920, when it was 1·4 per 1000, to 4·34 per 1000 in 1930, and this caused Dr. ORENSTEIN to institute another experiment in August, 1929. In three mines chosen as being representative of the whole group under his charge inoculation was discontinued, while it was continued in the other mines of the group. The average native population in the uninoculated mines was 30,000, and in the inoculated ones 50,000. On comparing the figures for 1928 and 1930 it was found that in the inoculated group the attack-rate for 1930 was higher than for 1928, though the death-rate was lower, whereas in the uninoculated mines there was both a lower attack-rate and a lower death-rate. Mathematical examination of the actual figures indicates that inoculation is actually unfavourable to the reduction of the attack-rate from pneumonia. The advocates of inoculation have stated that the type of pneumonia on the Rand has changed, as observed clinically, from that prevailing in 1920. It is, perhaps, difficult to measure most clinical manifestations, but one, the fall of the temperature, can be accurately recorded, and it has been stated that in the modern cases the temperature tends to fall by lysis. Dr. ORENSTEIN claims that this is incorrect, and publishes tables showing that in 975 consecutive cases in 1912 crisis occurred in 34·7 per cent.; in 269 consecutive cases in 1929–30 the temperature fell by crisis in 75·4 per cent. From these and other data it is concluded that there has been no significant change in the clinical manifestations and time of attack of pneumonia during the period under review. Furthermore, post-mortem evidence lends no support to the view that there has been a radical change in the type of the disease. Finally, Dr. ORENSTEIN discusses the view that the inefficacy of the vaccine in current use is due to an alteration in the bacterial flora of pneumonia, and points out, even when the vaccine corresponded to the dominant flora found in pneumonia locally, no protection at all comparable in degree with that which follows antityphoid inoculation was ever demonstrated; and he also suggests that, on general grounds, protection is hardly to be expected against a disease an attack of which confers little or no immunity.

It is, of course, notoriously difficult to conduct crucial experiments where human beings are concerned, but it is not a little disquietening to find that the elaborate investigations which were

[1] Vaccine Prophylaxis in Pneumonia, Journal of the Medical Association of South Africa (B.M.A.), June 13th, 1931, p. 339.

carried out on the Rand are open to such stringent criticism. If experiments conducted with the assistance of a medical organisation as efficient as that on the Rand, and with many thousands of subjects, can be as inconclusive as these apparently were, what success can be expected from the application of the experimental method to other aspects of clinical medicine? For in few problems will the conditions be less complex or the point at issue more clearly defined. Dr. ORENSTEIN no doubt would claim that these experiments did, in fact, achieve a negative success, but it is doubtful if the exponents of prophylactic inoculation will agree with him; their reply will no doubt be forthcoming in due course, but, in the meantime, Dr. ORENSTEIN would seem to have established his thesis.

THE MEDICAL OFFICER OF HEALTH: PAST, PRESENT, AND FUTURE.

QUIETLY, without disturbance of public administration, but also without any striking reform of procedure, the transfer of poor-law functions which was one of the main purposes of the Local Government Act, 1929, has taken place. Medical officers of health in counties and county boroughs are the responsible "advisers" of the public assistance committees, although their influence upon the deliberations of these committees inevitably varies in different areas. It may be presumed that local committees representative of the voluntary hospitals, in terms of Section 13 of the Act, have been set up, although outside of London and a few of the bigger provincial towns there is not much evidence that they have got down to business seriously. County councils are proceeding with the duty, imposed upon them by Section 46 of the Act, of rearranging the sanitary districts within their boundaries; and closely linked up with this problem is the very important obligation placed on them by Section 58 to ensure that every such district shall, when the opportunity of change arises, be served by a medical officer of health who is not engaged in private practice. It is fitting that this year, for the first time, the president of the British Medical Association is a full-time medical officer of health. Dr. WILLOUGHBY reveals in his presidential address, which we publish in abridged form on p. 171, a sympathetic perception of the reasons for the difference in outlook which sometimes impairs cordial relations between public health officers and practitioners. This difference should diminish now that medical officers of health have responsibilities in connexion with municipal hospitals, which must be largely curative, and, on the other hand, efforts are being made to enlist the cöoperation of practitioners in the preventive work of clinics.

If the counties and county boroughs approach their tasks with a real appreciation of the objects underlying the Local Government Act, if local pride and the entrenchment of the old spirit of bumbledom in the new public assistance committees can be counteracted, we ought to be able to look forward to a new era of unification in the public medical services and of friendly coöperation between these and the various voluntary organisations whose fields of activity are being, if gradually, invaded. It is, perhaps, appropriate that the parting of the ways should be marked by the publication of historical accounts of the growth of public health organisation in places which have been in the van of sanitary progress since CHADWICK, CHESTERFIELD, SIMON, FARR, and other men of vision awakened the public conscience to the meaning of the hygienic disasters of a hundred years ago. In his book, "Health at the Gateway," Prof. E. W. HOPE [1] describes in popular language the development of the health department of Liverpool of which he was the head for many years. He deals chiefly with the special problems arising from the staple industry of that city—which is shipping—its peculiar exposure to the risks of infection from European transmigrants and the overcrowding and disease which arose from mass invasions from Ireland during the "hungry forties." The gradual evolution from a department consisting of a part-time medical officer of health working single-handed to the present large and complex organism is traced throughout the intervening years. The problems of Glasgow were not unlike those of Liverpool and an even more informative account of them and the way in which these were met was provided last year by Dr. A. K. CHALMERS,[2] who was formerly medical officer of health of that city. Dr. CHALMERS provides a fitting sequel to the classical writings of J. B. RUSSELL [3] which he brought together and edited in 1905. In these books the foundations of a service are recounted and there is traced the slow synthesis of a health department by the attraction to it of one element after another, so that it has been gradually prepared for its latest and perhaps its greatest extension of functions, that which has come since these writers ceased to be active agents in the process. Looking back on the early days of preventive medicine in these cities we cannot fail to be impressed with the fact that their first medical officers of health were enthusiasts and missionaries. They were pressed to the service by a realisation that their day-to-day work as medical practitioners was nullified by conditions of living that must be rectified by large-scale operations. They were physicians by profession, propagandists by calling, and administrators by force of circumstances. Sir WILLIAM GAIRDNER was at one time professor of medicine and medical officer of health of Glasgow and perhaps it was this eminently desirable combination of appointments that gave to the health department of that city the scientific bent which has marked its subsequent activities. An even more striking instance of science wedded to administration may be found across the Atlantic in the life of the late HERMANN

[1] Health at the Gateway. By E. W. Hope, O.B.E., M.D., D.Sc., Professor of Public Health, University of Liverpool. Cambridge University Press. 1931. Pp. 213. 15s.

[2] The Health of Glasgow, 1818–1925. By A. K. Chalmers, L.L.D., M.D. Printed by the Authority of the Corporation. 1930.

[3] Public Health Administration in Glasgow.

BIGGS of Yale, recently commemorated [4] by his friend and colleague Dr. WINSLOW. Among the many appointments which BIGGS held were those of bacteriologist, consulting physician to various hospitals, professor of anatomy, professor of materia medica, professor of therapeutics and clinical medicine, and professor of practice of medicine. He became successively director of the Rockefeller Institute and Commissioner of Health for New York City, general medical officer of its reorganised health service from 1902 to 1913, and, finally, Commissioner of Health for New York State. What more appropriate career can be imagined for a medical officer of health, but how is it possible to introduce such men to the head of affairs in an established service such as ours?

The public health service in this country has grown out of all recognition since its inception. Without losing its environmental interests it has come to embrace almost the whole range of clinical work. The men who have grown up in it during the last 30 years or more have been actively engaged in the treatment of certain diseases, some of which are almost side issues of medicine. To an increasing extent institutional organisation for the treatment of all sorts of disease is bound to be a dominating interest for the medical officer of the future, now that the functions of the poor-law have been transferred. If this integration of the medical services is to reach its full fruition in benefit to the communal health, it is imperative that these officers should be well and specially trained. The General Medical Council has shown its realisation of this need by issuing new regulations for the diploma of public health which, incidentally, are causing the medical schools some concern. But it is even more important that the method of selection of men for the senior posts of the service should be inquired into. There is none of their responsibilities to which lay councils cling more jealously than that of making appointments, and yet it is impossible to believe that they are fit for this task without expert guidance. The universities have met similar difficulties by the formation of appointments boards and this suggests a way which the Ministry of Health might point out to the councils, at least of counties and county boroughs. We fear, however, that the acceptance of any such proposal by local authorities would be long delayed. The Mayo librarian case in Ireland, where appointments have been centralised, shows the need for caution, but the successes of the Irish scheme have also their lessons for us. The fetish of administrative capacity has to be exorcised. Clearly it is desirable that medical officers of health should be capable of applying medical knowledge to the day-to-day routine of their office, but it is hard to see how sound administration can be based on any foundation but professional attainment and a close contact with the results of medical research. The medical officer of health, as BIGGS insisted, should be relieved as far as possible of petty office routine. Much less office discipline of medical staffs, for instance, would be necessary if appointments were always made on merit. The medical officer of health should be first of all a man of professional and academic attainment and in the second place an administrator. There is a danger that the present method of making appointments is tending in the opposite direction.

[4] The Life of Hermann Biggs. By C. E. A. Winslow, D.P.H., Professor of Public Health, Yale School of Medicine. Philadelphia: Lea and Febiger. 1929. 15s.

NUTRITIONAL ANÆMIA IN INFANCY.

FOR the past five years Dr. HELEN MACKAY has been investigating simple anæmia in infants. Some of her earlier conclusions regarding the prevalence of this condition and the means of preventing and treating it have already been published and are familiar to those who are interested in pædiatrics. Her more recent findings, however, emphasise the immense practical importance of this pathological condition, and the full account of her work, which has just been published,[1] is likely to prove of great service to those concerned in any way with the welfare of the infant. Her main thesis is that simple anæmia in infancy resulting from iron deficiency is extremely common and is directly or indirectly responsible for a great deal of ill-health among infants, because it is associated with a lowered resistance to infection. The statement has often been made that this type of anæmia is rare. By examining blood samples from healthy breast-fed infants and from infants in whom the existence of anæmia was ruled out as far as possible by appropriate prophylactic measures, it has been possible to draw a curve representing the normal hæmoglobin concentration during the first 12 months of life. Shortly after birth this concentration falls from its high level of 120–140 per cent. and reaches an average of 99 per cent. in the third or fourth week; by the second or third month it has fallen to 69 per cent., but then rises until at five or six months it reaches 80 per cent., where it remains until the end of the first year. The frequency of anæmia in the East End of London has been measured by the examination of more than 1000 infants. Only 10 per cent. of artificially fed infants and 16 per cent. of breast-fed infants showed a hæmoglobin concentration of 80 per cent. or more after the age of 5 months. The fact that appropriate treatment caused 69 per cent. of the infants to reach this hæmoglobin level is taken as evidence that lower levels of hæmoglobin concentration do, in fact, represent a true state of anæmia, and this conclusion is almost certainly justifiable.

That the main cause of this anæmia is a deficiency of iron, and possibly also of other metals such as copper, is suggested from the results both of animal experiments and of prophylactic trials in clinical practice. The production of nutritional anæmia in young animals by feeding them after weaning exclusively on milk has been recently reported from several laboratories, and it has been shown

[1] Nutritional Anæmia in Infancy, with Special Reference to Iron Deficiency. By Helen M. Mackay. Assisted by Lorel Goodfellow. With a Statistical Appendix by A. Bradford Hill. Medical Research Council Special Report Series, No. 157. London: H.M. Stationery Office. 1931. Pp. 125. 2s.

that this type of anæmia can be cured by the addition of iron together with traces of copper. The iron content of cow's milk is known to be lower than that of human milk, and is not, in fact, sufficient to supply the infant's needs after he has exhausted the reserves normally stored in his liver at birth. Dr. MACKAY has shown that the regular addition to a milk diet of a soluble iron preparation is remarkably successful in raising an infant's hæmoglobin concentration to the "normal" level. Iron and ammonium citrate was the preparation used, and it was either given in a mixture or was incorporated with the dried milk given to the infants in such proportions that from 4½ to 9 grains a day were taken. This preparation was shown to contain traces of copper, so that part of its effect may have been due to this metal. Although this simple or nutritional anæmia has been shown to be extremely common, at least in the East End of London, and to be readily amenable to treatment, it often appears to be associated with little or no general disturbance of health and might therefore be considered of no great practical importance. But evidence is presented in this report which shows that this view is untenable. Among Dr. MACKAY'S cases the morbidity-rate of infants receiving prophylactic doses of iron was only about half that of control cases not receiving iron. Certain types of infection are known to predispose to anæmia, and this anæmia itself appears to reduce resistance to infection; the vicious circle can be broken by the administration of iron, and, in fact, many infants with chronic infections were observed who had an associated anæmia and who improved dramatically as soon as iron treatment was instituted. Moreover, the infants receiving iron gained in weight at a greater rate than the controls.

The evidence presented in this report, which has been subjected to statistical analysis by Mr. A. BRADFORD HILL, D.Sc., points conclusively to the existence and the importance of the condition of iron deficiency, or nutritional anæmia, among infants in this country. The simplicity of the treatment recommended for its prophylaxis or cure should ensure its wide adoption and the disappearance of a deficiency disease with its unfavourable effects on the health of the infant community.

ANNOTATIONS

NARCOTIC DRUGS: A NEW CONVENTION.

THE conference on the limitation of the manufacture of morphine, heroin, cocaine, and other narcotic drugs, to which reference was made in our issue of June 27th (p. 1407), was in session at Geneva from May 27th to July 13th. It has prepared another convention, which in some particulars is supplementary to the Opium Conventions of 1912 and 1925. As intimated in our annotation, the "quota scheme," whereby due proportions of the world's requirements of the drugs referred to were to be produced respectively by the eight countries which are at present engaged in their manufacture, did not commend itself to the conference. That scheme, espoused by the British delegate and backed by the advisory committee of the League, as well as by the London conference of manufacturing countries, found few supporters. The more complicated scheme, whereby annual estimates of the products of each manufacturing country are not to be exceeded, whether for export, conversion, government stocks, or home consumption, was adopted. Codeine, dionin, and peronin are to be brought within the convention, while heroin is only to be exported to governments. New preparations derived from opium or coca leaves are not to be manufactured unless the government of the country of origin is satisfied as to their medical or scientific value; nor shall such be exported until the opinion of the Health Committee of the League of Nations as to their capability of causing addiction has been declared. It is noteworthy that this new convention will not be applied unless and until 25 nations, including four of the eight manufacturing countries, shall have ratified it. The effectuation of an international treaty has to proceed by way of signature, ratification, putting the convention into force, legislation, and enforcement of legislation. The Geneva Convention of 1925 required ratification by ten Powers, including seven represented on the Central Board, of which two were to be permanent members of the Council of the League. It will be recalled that it was several years before that convention came into operation and that some of the more important opium- and coca-producing countries are still outside its scope. Statistics recently issued by the League of Nations show how much can be achieved by effective legislation based on the existing conventions, as in the case of the Dangerous Drugs Act, 1920–1925 of Great Britain. By such means it appears that the appalling illicit traffic in narcotic drugs can be successfully reduced, while their medical and legitimate uses are not unduly restricted.

THE CARE OF THE DEAF.

WE have on many occasions called attention to the neglect by the State of deaf persons who, if properly trained, could be made into useful and self-supporting citizens, and the matter has been constantly put before the public by the National Institute for the Deaf. Ministers of State, whose departments could do much to ameliorate the lot of these afflicted and handicapped persons, have expressed official sympathy under two administrations, while last year, at the annual meeting of the Institute, Mr. Baldwin gave an eloquent and thoughtful address on the subject. Apathy, however, has not been overcome, as was indicated by Lord Charnwood, the President at the annual meeting at Church House, Westminster, recently. He said that the average man and woman wholly failed to appreciate the character of the affliction, while, owing to lack of general knowledge, the necessary money for carrying out the beneficent work of relieving it was not forthcoming. Yet, he said, the sum needed was very small as compared with the response given to appeals for other charitable objects. The report of the executive committee of the Institute, which has reached us, emphasises Lord Charnwood's words. This shows that the debt on Richardson House, which now provides a home for a small group of deaf women, amounts to £1237, and that during the past year, apart from a legacy of £500, the

ordinary current income has fallen slightly short of the expenditure. The legacy, which ought to have been used for endowment purposes, has been expended on current needs, and, as a matter of fact, a considerable part of the Institute's investments have had to be similarly treated. It is clear that there is as yet no general recognition of the fact that the burden of the deaf on the country might be turned into a valuable asset if the subjects of the disability received proper training.

MEDICAL EDUCATION IN RUSSIA.

THE Russian government has to provide for a large primitive population spread over a vast area and is trying to create in a few years an effective medical service. The Chinese problem is in some ways similar, and it is interesting to hear comments on the Russian scheme from an experienced educationist in China. Dr. F. R. Dieuaide [1] chiefly criticises the establishment of medical schools cut off from association with universities. Such schools, he thinks, tend to run downhill, and their staffs must be constantly refreshed by drafting in men from intellectual centres. He fears for the new Russian system that a time will come when its graduates are equipped with out-of-date technique and can no longer satisfy the very needs that called them into existence. Technical schools of medicine will, he says, exist in any case, but it does not seem desirable to create them deliberately. Medicine is a living, growing field of human interest inextricably bound up with other sciences, and the physician needs not only the highest possible technique but all the intellectual power of which he is capable. In public health, for which Russian doctors are to be specially trained, this need is the greater by reason of the extended opportunities which this work offers. For this reason Dr. Dieuaide rejects the Russian solution of a large number of medical schools with low requirements and short courses.

ELECTRICAL APPARATUS AND ACCIDENTS.

DURING the last few months three serious casualties at hospitals have been reported in the press. In all of them the accident has been traced to some fault in the design, use, or condition of an electrical appliance. In one case an electric pencil light, used for examining the patient under an ether anæsthetic, caused a serious explosion, which was due to a spark resulting from a bad contact between the lamp and its holder. The second mishap was an explosion during an operation involving the use of diathermy apparatus. The third was attributed to faulty insulation in a radiant-heat apparatus, which resulted in a short circuit through the patient, and thence to the metal framework of the bed and the waterpipes. Two of these accidents were fatal and the other serious in its consequences. In two of them no harm would have been done but for the explosive nature of ether vapour when mixed with air, and they emphasise the warning that whenever ether is used the greatest care is necessary on the part of everyone concerned in the use of any appliance which is capable of raising the temperature of the air above the flash point. It is disturbing to think that there must be pencil lights, similar to that employed in one of the accidents cited, still in use. If the explosion was due to a bad contact between the lamp and the lampholder—and there is no reason to doubt the conclusion—this argues that the design leaves much to be desired. The avoidance of these accidents in future, then, is largely bound up with circumspection and with placing of faultless appliances in the hands of the practising medical public. Some few years ago, as part of a scientific instrument exhibition, an instructive section was devoted to those showing faulty design. It is a commonplace for anyone using electrical appliances to notice the rather casual way in which connexions are made between conducting wires and the plugs and switches to which they lead, and it is almost always at these points of contact that wires get frayed or break away from their bearings. It seems that ingenuity is still required to give flexibility in use and yet leave no weak spots.

Surgeons and other medical men have every year an addition to the electrical appliances put at their service, and there is an urgent need for guarantees of complete safety, such as we have had during the last few years in X ray work. In this department recommendations have been made which appear to give real safety where once there was real danger.

[1] Nat. Med. Jour. of China, June, 1931, p. 283.

CARCINOGENESIS WITH DIBENZANTHRACENE.

THE neat appropriation to cancer research of a method of preparing a complex chemical substance is described in the annual report of the British Empire Cancer Campaign, which is noticed on another page. If it were still necessary to emphasise the fact that pure research, conducted with no utilitarian bias, may find practical applications in the most unexpected quarters, this train of events would provide a cogent example. In February, 1929, a method for the synthesis of 1 : 2 : 5 : 6 dibenzanthracene was published in a German chemical journal having no connexion with cancer research. This is only one of a great number of new compounds constantly being produced by organic chemists, and there would have been nothing to draw attention to its possibilities as a carcinogenetic agent had not Mr. J. Hieger, working at the Cancer Hospital under the general direction of Prof. E. L. Kennaway, been on the look-out for new compounds closely related to benzanthracene. For he had previously noticed the resemblance between the fluorescence spectrum of benzanthracene and that of a cancer-producing coal tar, and the association had led him to seek a pure chemical substance which would replace coal tar as a carcinogenetic agent. Benzanthracene itself, which consists of four benzene rings fused together, has only feeble cancer-producing power; in a series of 70 mice painted with it, only one papilloma appeared. But the addition of one more benzene ring in a certain position (dibenzanthracene) has given 58 cancers and 9 papillomas in 190 mice, of which 104 lived for more than six months. Experiments are being undertaken with closely allied compounds, which vary greatly in carcinogenetic activity. The two compounds which, up to the present, have been found most active differ from the almost inactive parent substance, benzanthracene, in that the molecule, as shown in the conventional graphic formula, is extended at the lower left-hand corner, in one case by the *iso*propyl group $\begin{matrix}CH_3\\CH_3\end{matrix}\!\!>\!CH-$ in the other by a fifth benzene ring. The question whether this type of molecular structure has any general significance in cancer production must be decided by much further work. Many other compounds besides those mentioned above are being examined.

Dr. Cook has devised a method for preparing dibenzanthracene in a very pure state, and seems to

have disposed of the possibility that the action of this compound is due to some unknown impurity. The usual method of producing tumours is to paint the skin with a saturated benzene solution of the compound in the strength of about 1 in 400; but a solution as dilute as 1 in 4000 has produced carcinomata after one year's painting. It is suggested, with good reason, that painting with crude tar should henceforward be considered obsolete for any purpose where the actual process of carcinogenesis is under study. All such experiments should now be carried out with pure substances. When one paints tar on the skin to produce cancer he is applying many scores, or even hundreds, of compounds, of which perhaps only one or two are actually required. All the superfluous substances may have their own confusing effects, and some of them, such as the phenols, are very irritating. Tar painting is suitable where the chief object in view is merely to obtain a number of tumours, but when the mechanism of their production is being studied the use of pure substances is obviously preferable. The examination of other chemical substances allied to benzanthracene continues, and it is anticipated that substances with far more powerful carcinogenetic properties will be discovered.

THE LABORATORY DIAGNOSIS OF MALARIA.

ELEMENTARY as they may seem, the laboratory methods which make malaria parasites readily visible give constant trouble to the isolated medical man in the tropics. This point has been impressed on Colonel R. Knowles, of the Calcutta School of Tropical Medicine, by the almost daily receipt of letters from all parts of India asking for help in difficulties of this kind. He has made this help generally available in a paper[1] in which he explains in precise and valuable detail how to prepare and examine thick and thin blood films and make Bass's cultures of suspected blood. For each procedure there is explained exactly what to do, what not to do, and how best to retrieve mistakes if, haply, correction is possible; and occasion is taken to point out how dependent is diagnostic success on payment of the most painstaking attention to detail, a warning which is equally needed in some other branches of tropical medicine. For all these matters the paper itself will be extensively consulted, and in this way the author's valuable experience will reach a wide circle.

But it is appropriate to state here certain difficulties which the personal factor introduces into the recognition of malaria parasites. At the end of a six months' course the 45 members of a class studying for the Calcutta Diploma in Tropical Medicine were given two tests of their skill in recognising the different species of malaria parasites. In the first the microscopical field contained a single parasite, and only 41 per cent. correctly named it; in the second, in which the slide might be moved and examined at leisure, 80 per cent. gave accurate answers. It is concluded that the latter figure displays the accuracy of a brigade or divisional laboratory. These same tests were then voluntarily submitted to by nine experts. In the first test there was agreement to the extent of 63 per cent.; in the second to 93 per cent. These tests, it is pointed out, show that the custom prevalent in certain laboratories of announcing the species of malaria parasite concerned, when only one or two specimens have been seen, will be wrong as often as not, and they make it clear that in this matter there should be some accepted standard of time spent in examining a specimen. It is suggested that this should be ten minutes, of which eight should be spent over a thin film and two over a thick one. It is felt that this is as much time as most laboratory workers can be induced or can afford to spend on a single case. In every instance it is held that a Bass's culture should also be made. Were the adoption of such a standard generally contemplated the demand would certainly arise for information as to the percentage of accuracy, in both the fact and kind of infection, which it actually attains in cases in which plasmodia are only scantily present in cutaneous blood.

[1] Indian Med. Gaz., May, 1931.

STAPHYLOCOCCAL INFECTION OF THE NOSE AND LIP.

THE region of the nose and upper lip, drained by the anterior facial vein, has aptly been called the "danger area," with regard to staphylococcal infection. During the last two years attention has been directed, by a number of articles reporting fatal complications, to the serious consequences which may follow such infections. There is obviously some peculiarity about staphylococcal infections, apart from their close connexion with the cavernous sinus and the meninges, which render them dangerous and often fatal when occurring at this site. A carbuncle of the neck is a common affection, but when it occurs in a young and healthy adult the results are very rarely fatal. The thick skin and the presence of a dense subcutaneous tissue help in the production of a natural barrier to the infection, and when the subcutaneous veins are involved they thrombose and collapse, and thus assist in shutting off the infection. Dr. Irwin I. Koslin points out[1] clearly that the response to infection in the so-called danger area is different. The thin skin and subcutaneous tissue allow early and easy invasion of the veins, which are themselves different in structure; they are valveless and are "patent veins," which do not collapse when thrombosis occurs. They have, moreover, a very free connexion with the cavernous sinus through the ophthalmic and angular veins. There is no definite evidence as to the means by which infection spreads from the primary focus to the cerebral sinus, though it must do so in one of three ways—by the lymphatics, by direct spread of thrombosis, or by a retrograde embolus.

The point of practical interest is how to deal with a small primary focus on the nose so that the dreaded spread to the cavernous sinus may be prevented. At the beginning of the century treatment on ordinary surgical lines was advocated, and incision and drainage was generally accepted, just as excision of a carbuncle of the neck is widely practised now. The results of such excision are excellent, but the results of surgical intervention when the focus is on the nose were extremely bad. It is generally accepted that incision, squeezing, ligature of the angular vein, and other active measures are dangerous in that they may break down the delicate barrier being erected between the body and an invader that will rapidly kill once the defences are broken through. It seems desirable, however, that conservative methods, such as hot bathing, fomentations, saturated magnesium sulphate dressings, poultices, and even ultra-violet light treatments should be supplemented at the right moment by puncture and cauterisation. In an article on cavernous sinus thrombosis as a fatal complication

[1] Annals of Surgery, July, 1931, p. 7.

of minor facial sepsis[2] Mr. Scott Brown suggests that at the first definite sign of pointing, it is safe and wise to puncture a small focus with a sharpened orange stick which has been dipped in carbolic; larger or "blind boils" he treats with liquor hydrargyri nitratis acidus applied to the core, precautions being taken to avoid overflow of the acid on to the skin. It is important to emphasise the serious results that may follow these minor infections, but those who are fighting them and vividly anticipating the development of an orbital cellulitis, chemosis, or proptosis, should remember that, though septic foci on the nose, lip, and particularly the naso-labial fold, are common, Dr. Koslin collected only six fatal cases from the records of the Lebanon Hospital between 1922 and 1930, and Mr. Scott Brown only the same number from St. Bartholomew's Hospital over a similar period.

EVOLUTIONARY TENDENCIES IN TEETH AND JAWS.

IN man the growth of a larger brain, and the cultivation of its complicated functions, call for much more time than is required for the development of other creatures, and during the years thus occupied the eruption of the teeth is delayed. In his lecture to the International Orthodontic Congress in London on Monday Prof. Elliot Smith pointed out that most of the problems responsible for the creation of the orthodontic profession arise out of the circumstances created by these delays in the growth of the jaw while the brain is growing. If æsthetic considerations and man's interest in faces play some part in creating the demand for orthodontics, the growth of the brain is chiefly responsible for disturbing the orderly process of uniform growth of the jaws from which the dental troubles arise. The chin, which is modern man's peculiar distinction, has probably developed because the growth of the tooth-bearing part is restrained by the long delay in the eruption of his teeth. There has been much speculation as to why this should be so, and it is strange, said Prof. Elliot Smith, that no mention has been made of the fact—clearly emphasised by Dr. H. A. Harris[3]—that the human child until the seventh year, during the pause in his dental development, is growing a phenomenally large brain, and for another 15 years or so, while again he is relatively sluggish in his dental affairs, he is occupied in learning how to put his complicated cerebral instrument to the biological uses essential for human existence. The delay in tooth and jaw development is undoubtedly due to these momentous events, and the salient chin is an index of "mental" development in the psychological as well as the anatomical sense of that term.

This wider vision of the evolution of the face, continued the lecturer, enables us to view in truer perspective many false claims that are repeatedly being made about human tendencies. The reduction in size or absence of the third molar is often said to be a sign that man is destined to lose that tooth in the near future. But in Peking Man, who is supposed by some palæontologists to have lived as much as a million years ago, the third molar is smaller than the others, and the same condition is not uncommon in apes and monkeys. It is in fact a tendency which the whole order of Primates has inherited. Nor, in Prof. Elliot Smith's opinion, does there seem to be any justification for the belief that dental troubles, such as crowding and displacement of teeth and the consequential difficulties, are due to evolutionary changes that are now active. There is no evidence that, apart from the results of racial mixture, any detectable changes are taking place in the jaws and teeth. The same irregularities and deficiencies were occurring 50 centuries ago and contrasts in the form and proportions of the jaws were just as marked. Evolution works with exceeding slowness, and there appears to be no certain evidence, he said, that any effects that can be attributed to recent evolution have yet been detected in modern man's jaws and teeth.

[2] THE LANCET, 1931, i., 960.
[3] Ibid., 691.

MEASUREMENTS FOR JAEGER'S TEST TYPES.

VISUAL acuity is universally measured by the size of type visible at a distance where accommodation does not come into use. The capacity to read at a short distance depends, apart from visual acuity, on the power of accommodation, and, in the case of myopes, on the degree of magnification which may be present owing to the short focal distance of the unaccommodated eye. For purposes of comparison it is desirable to have a standard of test type for near vision as universally recognised as that of Snellen for distant vision. The editions of Jaeger's type in general use are not quite uniform, although the smallest type is practically always of the same size (0·75 mm. for the height of capital letters and two-thirds of this height for other letters). A pamphlet published by the United States Public Health Service[1] proposes to standardise the size of Jaeger type, beginning at No. 1, as above, and going on with even increases of size by a geometrical gradient to No. 20, with the height of capitals fixed at 25 mm. A uniform standard is obviously desirable, and we think that the proposal of the United States Health Service should be adopted.

THE EPIDEMIOLOGY OF TRACHOMA.

BEFORE Noguchi died in 1927 he was working at a theory attributing trachoma to an organism which he called "bacterium granulosis," and his pupils claim to have confirmed his results. In a general review of the epidemiology of the disease, Mr. A. F. MacCallan[2] opines that until this organism has been isolated in Egypt, the home of the infection, judgment must be suspended. The various countries he divides into four groups, according to the prevalence of the disease. It is practically universal in Egypt, the Levant, Morocco, Algeria and Tunisia, Palestine, Arabia, Persia, and Iraq. It is very common in Italy, Greece, Corsica, Sardinia, Poland, Lithuania, Latvia, Esthonia, Finland, Czechoslovakia, Russia, China, Indo-China, Japan, Argentina, Mexico, and Turkey. It is occasional, with local heavy infections, in Ireland, Holland, Belgium, France, Spain, Portugal, Hungary, Austria, Germany (very local East Prussia), Albania, Jugo-Slavia, Bulgaria, Rumania, Australia (very local), and United States of America (very local, especially among the Indians). It is rare in England, Scotland, Wales, Norway, Sweden, Denmark, New Zealand, and Canada. Four stages of the infection may conveniently be recognised according to the prominence of lymphoid follicles, papillary hypertrophy, and connective tissue formation. Infectivity depends partly on the stage of the disease, the first two stages before cicatrisation has commenced being the most contagious, partly on the presence of an intercurrent acute conjunctivitis, and partly on the state of the conjunctiva of the recipient. No race of mankind appears to be wholly immune. The

[1] Reprint from U.S. Public Health Rep., 1931, xlvi., 518. U.S. Government Printing Offices, Washington. 1931. 5 cents.
[2] Brit. Jour. Ophthalmol., July, 1931.

usual method of propagation is digital, with assistance from infected towels, handkerchiefs, and beds. Infections by flies probably play a part, though this is not proved. It appears that children are much more susceptible to infection than adults. The state of health of the individual appears to have no important connexion with the spread of infection. The increase of the number of infections during the hot months is probably only indirectly connected with the temperature, but directly with the occurrence of epidemics of contagious conjunctivitis due to the Koch-Weeks bacillus or the gonococcus, which in Egypt is not necessarily of venereal origin. In a typical Egyptian village it was found that a quarter of the children were infected with trachoma before the end of the first year of life.

In the presence of dirt, bad housing, and bad water-supply, prophylaxis is almost impossible, but with the opposite conditions much may be done. For Europeans in the East the chief danger of infection is through native servants. In cases already infected, daily treatment by a skilled hand can do much to secure cicatrisation of the trachomatous conjunctiva. The history of the successful fight against trachoma in England is instructive. In 1874, Nettleship found 42 per cent. of the inmates of poor-law schools in London trachomatous. Since the establishment of a special school at Swanley, where all trachoma cases can be treated and educated at the same time, the percentage has rapidly decreased. In 1896 it was 4·9 per cent. At present all infected cases found in any of the L.C.C. primary schools are sent to Swanley. Last year the total number of new trachoma cases was 42. Among the general population in England it is now rare to see a case of trachoma, and when such are seen it is generally in those returned from the East.

SULPHUR TREATMENT OF G.P.I.

THE use of sulphur injections in general paralysis was originally suggested by D. F. Tutunji [1] in 1925, but Knud Schroeder, two years later, was the first to put it into practice. Since Schroeder described his early results in THE LANCET[2] a considerable number of English observers have recorded their experience in these columns. N. G. Harris [3] found that injections of sulphur in olive oil produce high fever, even in patients who have had malarial treatment previously. He regarded the method as safe, simple, and worth trial. W. H. Shilvock [4] was also favourably impressed, but remarked on individual variations in the responses obtained. He thought that the remedy probably act by causing a focal reaction in areas of chronic sepsis. W. G. Patterson and S. R. L. Switzer[5] did not get such high temperatures as Schroeder with the doses he recommended; indeed, their average was between 101° F.–102° F. J. H. R. Laptain,[6] though pleased with the clinical results, found similar difficulty in obtaining high fever; and this observation is made again in a report from France by C. Levaditi and co-workers.[7] They have treated three cases, and say that the injections were well tolerated and sometimes evoked pyrexias similar to those of induced malaria. This action, however, is described as inconstant, and in none of the patients was any improvement noticed, either clinical or serological. They agree with Shilvock that the reaction varies considerably in different patients. Their first patient attained a temperature of 104° F. on two occasions early in the course; the other two did not reach this figure, which Patterson and Switzer regard as desirable. Yet with all this the mechanism of the remedy remains in doubt, and we welcome the publication of what appears to be the first experimental study of this aspect. R. P. Mackay,[8] of Chicago, after work on animals as well as human patients, tentatively attributes the fever to liberation of protein from muscle tissues which have been damaged by injection of the sulphur or by the irritant hydrogen sulphide. The building up of an immunity to sulphur strongly suggests, he maintains, that the reaction is biological rather than chemical, and he notes that patients in whom it is easy to produce fever by injection of typhoid vaccines also respond well to sulphur, and the contrary. Injection of sulphur suspensions into rabbits produced localised necrosis of muscle and an acute inflammatory reaction; and the facts, as he sees them, seem to place the fever following injections of sulphur on the same basis as that following extensive deep X ray therapy or extensive trauma to living tissue. Though it is too soon to decide on the therapeutic value of the remedy, one may say, Mackay concludes, that "sulphur can accomplish what fever produced by any other method can accomplish, and that by virtue of the long duration of the fever produced sulphur should bring results more rapidly and surely than any other method." At the same time the treatment should not be undertaken lightly, nor in cases where the therapeutic outlook is unpromising.

[1] THE LANCET, 1925, ii., 408.
[2] Ibid., 1929, ii., 1081.
[3] Ibid., 1930, i., 1068.
[4] Ibid., 1930, ii., 347.
[5] Ibid., 1930, ii., 348.
[6] Ibid., 1931, i., 635.
[7] Bull. Soc. méd. hôp. de Paris, June 29th, p. 1134.

AVERTIN AND CEREBRO-SPINAL FLUID.

SOME observations on the effect of avertin on the pressure of the cerebro-spinal fluid have been made at the Cleveland Clinic Hospital,[9] where this drug has been in routine use for the surgery of neurological patients. The investigators found that, using the dosage of 0·1 g. per kg. of body-weight, there was an increase in the pressure of the spinal fluid, of about 100 mm. of water, accompanying the narcotic state induced by the avertin injection. After about 15 to 25 minutes the pressure of the spinal fluid was about 50 mm. above the initial reading. It is conceivable that these results may be of practical import to those who combine the use of avertin injection with spinal analgesia. This combination has not, we believe, been very largely employed, but it is extolled by some as warmly as it is condemned by others. The future will, no doubt, assign to it its true value.

INDEX TO "THE LANCET,"
VOL. II., 1929.

THE Index and Title-page to Vol. I., 1931, which was completed with the issue of June 27th, is now in preparation. A copy will be sent gratis to subscribers on receipt of a post-card addressed to the Manager of THE LANCET, 7, Adam-street, Adelphi, W.C.2. Subscribers who have not already indicated their desire to receive Indexes regularly as published should do so now.

[8] Arch. Neurol. and Psych., July, 1931, p. 102.
[9] Jour. Amer. Med. Assoc., June 20th, p. 2102.

SPECIAL ARTICLES

AN INVESTIGATION INTO MATERNAL MORTALITY AND MORBIDITY

IN THE DOMICILIARY SERVICES OF MATERNITY HOSPITALS.*

BY J. M. MUNRO KERR, M.D. GLASG., F.C.O.G.,

REGIUS PROFESSOR OF MIDWIFERY IN THE UNIVERSITY OF GLASGOW;

AND

ALBERT SHARMAN, B.Sc., M.B. GLASG.,

CARNEGIE RESEARCH SCHOLAR AND SURGEON TO OUT-PATIENTS' ROYAL SAMARITAN HOSPITAL FOR WOMEN, GLASGOW.

A CONSIDERATION of domiciliary obstetric practice furnishes us with some very important information regarding maternal mortality. The domiciliary services of the large maternity hospitals and maternity units of the general hospitals, the services of such institutions as the Queen Victoria Jubilee Institute, and the records of cases attended by midwives in private practice, published by the local authorities, supply a mass of figures upon which exact calculations can be made. The services undertaken by these agencies differ very slightly as regards the conditions under which the work is carried on. Probably the services of maternity institutions, placed as they are in densely populated industrial areas, deal with the very poorest class, but all minister to individuals in very humble circumstances. On this point only a word or two is necessary. As far as can be judged from the investigations made by individual observers, public health authorities and specially appointed committees, all evidence goes to indicate that environment per se is not a causative factor of any consequence. "Crowded dwellings and dirty surroundings do not in themselves increase the incidence of puerperal sepsis." † Similar statements are made regarding food and alcohol. As regards food, we are convinced from cases admitted to hospital that insufficient food and food deficient in certain ingredients or constituents do exert an unfavourable influence on the course of pregnancy and on recovery after labour. Such factors must be predisposing causes to sepsis and obstetric shock, however difficult it may be to estimate their extent.

Our investigations have impressed us with the fact that antenatal care and early recognition of abnormalities are the most important factors in obviating mortality and morbidity.

The Inquiry.

With the object of discovering what exactly are the results in the domiciliary practice of a large institution, we have taken the figures of the outdoor service of the Glasgow Royal Maternity and Women's Hospital for the years 1926–1930, inclusive. To make the analysis of these figures as complete as possible, we have made the following investigations: (1) the fatalities in the district practice of the hospital; (2) the fatalities in the cases transferred from the district to the hospital; (3) the fatalities in cases transferred to municipal fever hospitals, to which all cases of definite puerperal fever are sent; (4) the incidence of notifiable pyrexia in the district practice; (5) the incidence of pyrexia in cases transferred from the district into hospital; and (6) the incidence of death and of pyrexia in cases attended by midwives and by medical students in training.

Before discussing these figures we must explain certain features of the indoor and district services of the hospital. The Glasgow Royal Maternity and Women's Hospital has never discriminated between "booked" and "emergency" cases. Its service has always been at the disposal of all women in pregnancy and labour. Unfortunately, of the district cases attended during the five years under review, only about 27 per cent. have attended our antenatal clinic. In recent years not only has the accommodation of the hospital (at present 175 beds, inclusive of 23 in isolation block) been taxed to the utmost, but there has been a steady increase in the number of indoor abnormal cases. This is evident from Table I.

TABLE I.—*Percentage Abnormalities in Indoor and Outdoor Services of the Hospital.*

Year.	Indoor.		Outdoor.	
	Total cases.	Percentage abnormal cases.	Total cases.	Percentage abnormal cases.
1926 ..	3653	58·3	3594	16·6
1927 ..	3902	60·1	3538	19·4
1928 ..	3941	62·4	3797	17·6
1929 ..	3841	68·9	3820	7·5
1930 ..	4469	70·1	4079	8·9

As indicating the extent of the indoor operative work, we find that during the years under review there were 659 Cæsarean sections, 419 cases of placenta prævia, and 546 cases of accidental hæmorrhage.

As regards the district practice, there has been a steady fall in the number of cases operated upon outside, although the total number of cases attended has increased. This is clearly indicated in Table I. It is accounted for by the fact that in recent years operations of any gravity have been discouraged; only the simpler abnormalities are treated in the patients' homes. As far as possible we transfer to the hospital all cases in which any difficulty in the delivery is obvious or anticipated.

The organisation and technique employed has not varied. The patients have all been attended by medical students or nurses in training. If any abnormal condition is detected, or should delay in the labour occur, the outdoor house surgeon is summoned. He, in turn, can appeal to one of the members of the indoor staff. For the cleansing of the attendant's hands and of the patient's vulva, soap and water and lysol have been employed. We have now substituted for lysol the routine use of biniodide of mercury. The nurses wear aprons, but neither masks nor gloves. The students wear gloves.

Table II. indicates the relative incidence of sepsis in students' and nurses' cases in the outdoor department. It will be noticed that cases of puerperal sepsis have been subdivided into pyrexia and fever for the year 1930 only, the reason being that this year was the first complete one for which exact figures for pyrexia and fever separately could be obtained from the local health authority. The increased recorded incidence of sepsis during the years 1929 and 1930 is probably due to the introduction of new notification

* Based on the district practice of the Glasgow Royal Maternity and Women's Hospital from 1926–1930, inclusive.

† Interim report of Departmental Committee on Maternal Mortality and Morbidity, par. 77, London, 1930.

regulations, and the consequent more complete and accurate notifications.

Throughout this investigation we have used as the standard of morbidity that of the Department

TABLE II.

Year.	Total cases.	Cases of puerperal sepsis.	Percentage incidence of sepsis.	Total deaths from sepsis.	Percentage incidence of deaths.
1926.					
Nurses .	2613	38	1·45	7	0·26
Students .	981	9	0·92	2	0·20
1927.					
Nurses .	2660	28	1·05	5	0·18
Students .	878	3	0·34	1	0·11
1928.					
Nurses .	3251	29	0·89	6	0·18
Students .	546	2	0·36	0	—
1929.					
Nurses .	3211	41	1·27	5	0·15
Students .	609	6	0·98	0	—
1930.					
Nurses .	3414	Pyrexia 20 Fever 42	1·81	1 6	0·20
Students .	665	Pyrexia 4 Fever 7	1·65	0 0	— —

of Health (Scotland)—namely, the occurrence within 21 days after childbirth or miscarriage of a febrile condition in which a temperature of 100·4° or more has been sustained during a period of 24 hours or has recurred during that period. We have referred to the fact that students wear gloves and the nurses do not wear gloves. To this, and to the fact that the former are possibly more imbued with the "antiseptic spirit" or conscience, we attribute the lower incidence of sepsis in cases attended by students. The very low incidence of deaths and sepsis in students' cases compares favourably with the very best figures yet published—e.g., East End Maternity Hospital, London, where morbidity for district cases in 1928, 1929, and 1930 averaged 0·34 per cent. In this institution only "booked" cases are attended. The nurses wear no gloves, and they trust entirely to very thorough disinfection with perchloride of

TABLE III.—*Puerperal Sepsis in Cases Delivered on District.*

Year.	In "Normals."			In "Abnormals."		
	Total cases.	Cases of sepsis.	Percentage morbidity-rate.	Total cases.	Cases of sepsis.	Percentage morbidity-rate.
1926 ..	2,998	39	1·3	596	8	1·3
1927 ..	2,852	25	0·8	686	6	0·8
1928 ..	3,129	23	0·7	668	8	1·2
1929 ..	3,534	38	1·0	286	9	3·1
1930 ..	3,716	41	1·1	363	8	2·2
—	16,229	166	1·0	2599	39	1·5

mercury. We are of opinion that the use of gloves is advisable as an additional protection to the patient, and that it is a protection to the attendant. The cost of gloves per patient, indoor and outdoor, works out at approximately 2*d.* per patient treated.

Tables III. and IV. indicate the total deaths and cases of pyrexia which occurred on the district. Of the 15 non-septic cases, 1 died undelivered, 3 died partially delivered, 5 of "obstetric shock," 2 of pneumonia present during labour, 1 under anæsthesia, 1 after removal of adherent placenta, 1 after forceps delivery, and 1 from cardiac failure on the tenth day of the puerperium. The following are very brief particulars of the most interesting cases.

(1) Twins: no interference; collapse several hours later · obstetric shock. (2) Normal; no interference except placenta expressed; some hours later found dead; obstetric shock. (3) Found dead when first seen, baby being born to shoulders; labour said to have been precipitate and painless; ? acute cardiac failure or obstetric shock. (4) Breech; as doctor tried to deliver head patient died, before delivery. (5) Baby born spontaneously before nurse arrived; patient died same day, no apparent cause. (6) Patient died as doctor arrived; ante-partum hæmorrhage: undelivered.

TABLE IV.—*Total Maternal Deaths from all Causes in Cases Delivered on District.*

Year.	Total cases.	Deaths in Cases Delivered on District.				
		Cases of sepsis.		Non-sepsis.	Total.	Maternal mortality-rate from all causes (per 1000 cases).
		In "normals."	In "abnormals."			
1926	3,594	7	2	1	10	2·7
1927	3,538	6	0	3	9	2·5
1928	3,797	6	0	4	10	2·6
1929	3,820	3	2	2	7	1·8
1930	4,079	3	4	5	12	2·9
—	18,828	25	8	15	48	2·5

We must now add the cases transferred to the hospital from the district and treated in the hospital. These are shown in the next Tables (V. and VI.). Table VI. includes both categories tabulated in Tables IV. and V.

TABLE V.—*Deaths in Cases Transferred to Hospital.*

Year.	Cases.	Total deaths.	Deaths per 1000 cases.
1926	166	9	54·2
1927	143	6	41·9
1928	109	5	45·8
1929	133	6	45·1
1930	141	6	42·5
Totals ..	692	32	46·2

TABLE VI.—*Total Maternal Deaths in District Cases, including those Transferred to Hospital.*

Year.	Total cases.	Total deaths.	Maternal mortality-rate per 1000 cases.	Maternal mortality-rate in Scotland per 1000 cases.
1926 ..	3,760	19	5·0	6·4
1927 ..	3,681	15	4·0	6·4
1928 ..	3,906	15	3·8	7·0
1929 ..	3,953	13	3·3	6·9
1930 ..	4,220	18	4·2	6·9
Totals	19,520	80	4·09	6·7

(Maternal mortality-rate statistics for Scotland, according to the Department of Health, are not strictly comparable with those for other countries, owing to different methods of classification.)

We must now analyse the cases operated upon on the district (Table VII.).

Unfortunately, as regards Table VII. we have not been able to extract exact figures as to the number of occasions on which each of these operations were performed, but we have been impressed with the high proportion of cases which developed pyrexia when the placenta was removed manually. It is a

striking fact that the only death from sepsis followed this operation.

We must now consider the incidence of death and pyrexia in cases transferred to the hospital from the district. The total district cases were 19,520, of which 692 were transferred to hospital. It is therefore with these 692 cases we have now to deal. Table VIII. is a summary of these cases.

TABLE VII.—*Details of Operations Performed on the District and followed by Sepsis.*

Year.	Total No. of operations.	Sepsis following operations.	Nature of operation.			
			Manual removal of placenta.	Forceps.	Curettage.	Suturing.
1926	454	4	3	1	—	—
1927	521	3	2	1	—	—
1928	501	6	6	—	—	—
1929	446	6	2	3	1	—
1930	208	5	3	1	—	1

TABLE VIII.

—	Deaths (32).		Pyrexia (68).
	Sepsis.	Non-sepsis.	Total cases.
Obstetrical complications	6	5	38
Toxæmias	—	6	4
Ante-partum hæmorrhage:			
Placenta prævia	1	2	11
Accidental hæmorrhage	—	7	1
Post-partum hæmorrhage	—	—	4
Abortion (and mole)	2	2	8
Cardiac	—	1	1
Debility	—	—	1
Totals	9	23	68

(The pyrexia-rate in these cases is 9·8 per cent.)

When a further analysis of these cases is made, we find they divide themselves into three groups: (*a*) Cases which died undelivered; (*b*) cases in which spontaneous delivery occurred; (*c*) cases in which operative treatment was necessary.

(*a*) CASES WHICH DIED UNDELIVERED.

There are six cases in this category. These patients only lived a few hours, some only a few minutes, after admission. Death in four cases resulted from accidental hæmorrhage, in one case from spontaneous rupture of uterus, and in one case from cardiac disease.

The high death- and pyrexia-rate shown in Table IX., 3·4 per cent. and 6 per cent. respectively, in spite of the fact that the delivery was spontaneous, is very striking.

It will be observed that in 9 of the 11 fatal cases death was due to eclampsia, accidental hæmorrhage, or yellow atrophy, and that 6 of the 19 cases of pyrexia were associated with those complications. This emphasises the importance of toxæmias as a cause of death and pyrexia.

Table X. shows a 4·06 per cent. mortality-rate and a 13·2 per cent. morbidity-rate in operative cases transferred from the district. This unselected operative group, illustrative of cases requiring institutional treatment, represents the grave cases one might expect to encounter in ordinary domiciliary practice. But had all these cases received close antenatal care, mortality and morbidity would have been enormously reduced.

We have, with the assistance of Miss Duff, our almoner, traced the total district cases which received antenatal care during these years, and, as already stated, found that they numbered only 27 per cent. of those attended. In analysing the deaths, we have been able to get exact information only regarding those district patients who were admitted to hospital and died there—32 in number. Of these only 5, or 15·6 per cent., had attended the antenatal clinic in the later weeks of their pregnancy.

It is of interest at this point to compare the mortality incidence in indoor cases which had antenatal supervision with those which had not. The death-rate over four years in the former category averaged 1·2 per cent. of admissions, as compared with 3·6 per cent. in the latter category.

Reports from Elsewhere.

In order to make our investigation of "district" midwifery a wider one, we have studied the 1926–1930 reports of several of the larger maternity hospitals and obstetric units of general hospitals in Britain,

TABLE IX.

(*b*) SPONTANEOUS DELIVERIES.

Cause for transfer to hospital.	Total cases.	Deaths, total.	Pyrexia, total.
Vertex, pelvis normal	121	1	4
,, ,, contracted	31	—	—
Face, delivered as such	2	—	—
,, corrected (1 brow, 1 face)	2	—	—
Breech	6	1	1
Complicated by—			
Albuminuria	9	—	—
Pre-eclampsia	5	—	—
Eclampsia	16	5	4
Pyelitis	3	—	—
Hyperemesis	1	—	—
Yellow atrophy	1	1	—
Cardiac	3	—	1
Bronchitis	3	—	—
Lobar pneumonia	1	—	1
Debility	1	—	1
Placenta prævia	14	—	1
Membranes ruptured	2	—	—
Pack	7	—	1
Accidental hæmorrhage	55	3	2
Membranes ruptured	6	—	—
Pack	1	—	—
Post-partum hæmorrhage	5	—	1
Prolapse of cord	4	—	—
Replaced	10	—	2
Hydramnios	2	—	—
Extensive perineal tear	6	—	—
Totals	317	11	19

TABLE X.

(*c*) OPERATIVE DELIVERY.

—	Total cases.	Deaths, total.	Pyrexia, total.
Breech delivery:			
Uncomplicated	40	—	4
With accidental hæmorrhage	1	—	—
Forceps: High	18	2	6
,, Low	82	—	9
Version:			
Transverse	15	—	2
Prolapse of cord	2	—	1
Placenta prævia	13	2	7
Pack and version:			
Placenta prævia	4	1	—
Accidental hæmorrhage	2	—	—
Cæsarean section	21	2	5
Craniotomy	17	1	2
Decapitation	1	1	1
Manual removal of placenta	17	1	3
Hysterectomy	2	1	1
Abortion: Spontaneous	14	1	—
,, Curettage	114	2	6
Hydatid. mole	6	1	2
Totals	369	15	49

(Abortions have been included in this table.)

and we are particularly indebted to the obstetric registrars of Queen Charlotte's, Guy's, St. Mary's (Manchester), and Liverpool maternity hospitals for their courtesy and assistance. Unfortunately, from none of the hospitals have we been able to extract figures exactly comparable over the five-year period.

As regards Queen Charlotte's Hospital, the total district cases attended for the years 1926–1930 numbered 8138, with four deaths and 321 cases of morbidity (3·9 per cent.). As the standard of morbidity used in these cases was "a temperature of 100° in the first ten days," a standard other than that of the Department of Health (which we employed), it is inappropriate to compare our figures. In that hospital district work is not done by students but by nurses and, until this year, neither gloves nor masks were worn by them. Lysol is the antiseptic employed.

In Guy's Hospital, the cases delivered on the district are not indexed separately from those delivered in the institution (from the hospital area), and consequently mortality- and morbidity-rates are composite for both categories. A temperature of 100·4 F. or more, sustained during a period of 24 hours or recurring during that period, has been used as the standard in calculating morbidity. In 1928, the morbidity-rate was 4·6 per cent.; in 1929, 4·1 per cent., and in 1930, 3·7 per cent. In Guy's service the wearing of gloves is optional, but is usual with students. The antiseptic employed is perchloride of mercury.

In the district service of St. Mary's Hospital, Manchester, gloves are only worn for instrumental deliveries, and the antiseptic used is biniodide or perchloride of mercury. During the earlier part of 1926, lysol was employed, and it is interesting to note that the puerperal sepsis-rate during that year was considerably higher than in subsequent ones. During the years 1926–1930, 6496 district cases were attended, with 6 deaths and 18 cases of puerperal sepsis. The B.M.A. standard of morbidity has here been employed, and this, together with the fact that district cases transferred to hospital are classed with hospital cases, has rendered a comparative analysis of their results with ours impossible.

The total number of district cases attended by Liverpool Maternity Hospital during the years of survey amounted to 7615. Figures of maternal mortality and morbidity for each of these years are not given in their reports, and there are no special statistics dealing with outdoor cases transferred to the hospital; consequently we cannot compare their results with ours. During the years 1928, 1929, and 1930, the district maternal mortality was nil. Both students and nurses wear gloves, and the antiseptic used is perchloride of mercury.

Conclusions.

We have investigated nearly 20,000 consecutive cases in the district practice of a large maternity hospital, including a "follow-up" of all the cases of puerperal sepsis. Impressed with the analysis of the figures we have reached certain conclusions.

(1) We consider the low figures for pyrexia in the outdoor work satisfactory.

(2) We are gratified to find that the results of the work carried on by medical students and midwives in training stand favourable comparison with those of the domiciliary midwifery services of other institutions and nursing organisations.

(3) It is our opinion that district morbidity can be further reduced, and that the routine use of gloves by pupil midwives and students, and the employment of biniodide of mercury, will assist materially in achieving this. We also advocate the wearing of a mask.

(4) We have been impressed by the fact that, in spite of the unfavourable conditions of district hospital practice, a simple antiseptic ritual appears to be sufficient.

(5) While not wishing to minimise the importance of sepsis as the primary cause of puerperal deaths, we would emphasise the important rôle of non-septic factors as causes of maternal mortality. The 15 deaths on the district from non-septic causes are illustrative of this; some represent probably the non-preventable accidental fatalities of childbirth. A number are stated, however, to have died of "obstetric shock" or collapse; this grave problem is receiving considerable attention at the present time.

(6) Our figures indicate that the morbidity-rate of the district service is lower than that of the indoor service in normal cases. One must, however, in making such a comparison, take into consideration the fact that the recording of temperatures is more complete in hospital than on the district. It would appear, therefore, that, judged from the purely medical point of view, there is no necessity for the general hospitalisation of uncomplicated cases. On the contrary, there appears to be a certain danger in housing normal with complicated cases. There can be little doubt, however, of the importance of transferring to an institution all cases requiring operative treatment.

(7) In common with others who have undertaken investigations into maternal fatalities, we are impressed with the high death-rate in women who had received no adequate antenatal care. As far as we can judge, the most striking immediate improvement in puerperal mortality and morbidity would be effected by the extension of antenatal care. It is most disappointing to find that the proportion of women seeking antenatal attention is so low (27 per cent.); further, that in the years under review it has remained stationary—viz., 1926, 29 per cent.; 1927, 25 per cent.; 1928, 25 per cent.; 1929, 27 per cent.; 1930, 28 per cent. It is to this aspect of the question that attention should be concentrated, in order to secure immediate improvement in maternal mortality and morbidity.

We desire to thank the Public Health Department of the city of Glasgow for their valuable assistance.

IMPERIAL SOCIAL HYGIENE CONGRESS.

AT a medical session on July 14th, at which Dr. DAVID LEES took the chair, a discussion on the

Choice of Remedies in Syphilis

was opened by Colonel L. W. HARRISON. In early syphilis, he said, his goal was 100 per cent. eradication of infection in every case. Other things being equal, he preferred the original 606 because it hit the spirochæte harder and longer than did 914, but unfortunately its reactions deterred many patients. Whichever arsenical drug was most convenient could be used, with a change to a different drug for the second course if the results had not been good at first. He believed in giving large doses and reducing the toxic effects to a minimum, rather than risking inadequate results for fear of consequences. The greater the individual dose, the better the immediate result. Encephalitis could be avoided by commencing the dosage cautiously and testing the patient's tolerance. Dermatitis would give no trouble if earnest attention were paid to the least

sign of skin lesion and sodium thiosulphate were used promptly. A deposit of arsenobenzol in the skin often caused sensitisation, with increased liability to dermatitis at a later date; therefore care should be taken to enter the vein and if, by any chance, the needle missed the vein, another vein should be selected at once. Jaundice was a more troublesome complication, for it was tantalising and followed no rules. It was never seen in the female and seemed to occur in outbreaks. There was some evidence that it was related to fasting; it was very rare among private patients, who usually ate a good deal of fat. Recent experiments by Craven suggested that it was wrong to make the patient eat a great deal of carbohydrate, and that the seasonal variation was related to a reduction of fat at certain seasons.

The choice of a bismuth preparation was far from easy, and depended on whether the bismuth was to play the principal part in treatment or only to serve to keep up a concentration between courses of other drugs. For the first purpose the preparation must be absorbed quickly and in sufficient amount to give an adequate concentration in the tissues. Too small a concentration might have a provocative effect, but the amount to be dealt with in one day must not throw too much work on the kidney—i.e., it should not be more than 10 mg. For this reason small doses should be given two or three times a week. If the bismuth were to be only an adjuvant the preparation should be absorbed slowly, but the compound must give up its bismuth ion. Intramuscular injection had a higher therapeutic index and margin of safety than intravenous; the latter route presented the drug so suddenly that toxic effects were likely to supervene. Watery preparations were the most rapidly absorbed; they were said to be more painful than others, but this defect could be obviated by administering them with a local anæsthetic. They must be given two or three times weekly. Oily preparations were absorbed evenly and regularly but more slowly, and therefore made a less violent assault on the excretory mechanism. They were actively spirochæticidal, but must be given twice weekly. The insoluble preparations of choice were the oxychloride in watery medium (which the speaker preferred), the finely divided metal, and the salicylate; the fineness of the subdivision was undoubtedly a factor in the therapeutic power. These preparations were used when the patient's tissues were to remain saturated between two courses of another drug. The fear was that absorption would be too slow.

Mercury should only be used where bismuth was impracticable, for as a rule it was impossible to obtain the necessary concentration in the tissues without going over the edge of toxicity. For oral use he preferred the yellow iodide or calomel, the absorption of which was proportional to the dose. Metallic mercury should not be used. The oral route should, however, only be followed when circumstances prevented other methods. For injection a watery solution given intravenously daily or on alternate days was the best, but there was no point in giving it if bismuth was available. On the whole calomel was the best preparation for regular absorption and activity, but it caused some pain, which could be overcome by local anæsthesia. When it could not be tolerated a cream of not more than 10 per cent. concentration should be used. The site of injection should be thoroughly massaged. For such patients as migrants, for whom bismuth treatment was impossible, mercury by the mouth was useful; the perchloride or iodide should be used rather than grey powder and a concentrated ointment given for inunction.

Late syphilis presented a very different problem: that only of keeping the spirochætes in check. In this stage mercury might be valuable, because it prevented the reaction of the tissues—in late syphilis the patient was often killed by his own defences. If the cerebro-spinal fluid gave a positive reaction there was little hope of changing it after two years. Early pyrogenetic treatment should be given, combined with tryparsamide. Malarial centres should be organised for these patients.

DISCUSSION.

Dr. A. R. COOK said that in Uganda there was some doubt of the efficacy of 606, and referred to Dr. J. H. Sequeira's papers.[1] Extraordinarily few cases of tabes and general paralysis were seen in natives of Uganda, although syphilitic hemiplegia was relatively common and there had been a decided increase of cardiovascular syphilis. Mercury and bismuth were given concurrently with arsenical preparations. The Bagandi had been a slowly dying race, though head and shoulder above other natives in physique; an intensive propaganda against venereal disease, and an antenatal and child welfare campaign had therefore been started to counteract the decrease in population. Mercuric chloride by the mouth had been selected as a cheap, popular large-scale method and had attained an enormous vogue, with striking results among the pregnant women. Babies were born healthy, and congenital syphilis was much less common than it had been.

Dr. JAMES MCINTYRE said that insoluble preparations had been found most satisfactory in County Durham. A lowered standard of nutrition had resulted in an increase of jaundice during arsenical treatment; dosage had been reduced and bismuth partially substituted.

Lieut.-Col. E. T. BURKE said that a great deal of under-treatment was going on in this country. He thought intravenous administration of bismuth absolutely contra-indicated. Thorough treatment by mercury might have tragic results on the patient; the drug should not be used when bismuth and arsenic were available and its value was that of an adjunct only. A pyrogenetic centre had been established in Salford to put up a "malaria barrier between the clinic and the mental hospital."

Lieut.-Col. J. J. HARPER NELSON described cases of arsenical neuritis seen in Lahore as a consequence of misuse of modern preparations. He had only seen two cases of tabes and one case of general paralysis in 12 years. Two of these three patients had had European blood. Possibly natives had been immunised by previous malaria. The commonest form of nerve syphilis was syringomyelitis, and the commonest circulatory lesion was aortitis.

Dr. NORA WATTIE urged the hospitalisation of acute cases, with frequent small doses at the beginning of treatment. Complications seemed to occur in the later courses rather than the first.

Dr. A. O. ROSS remarked on the great number of patients with primary syphilis who showed electrocardiographic change although they had no clinical signs of cardiac syphilis. He had seen a great deal of neurosyphilis in Europeans who had had malaria.

Dr. MYRTLE NORONHA suggested that lack of treatment in the early stage might account for absence of neurosyphilis in natives, the virus having burnt itself out before the "neuro" stage arrived.

Dr. LOUISE PEARSE agreed that this might be so, and mentioned experimental evidence in support.

[1] THE LANCET, 1930, i., 159, 723, and 1328; 1931, i., 57.

She agreed that 606 was a more effective therapeutic agent than 914.

Dr. A. G. COIA emphasised the rarity of tabes and general paralysis in the tropics and said that in British Guiana the treatment had been very unsatisfactory in the past; patients had probably died of other syphilitic complications before they had had time to develop neurosyphilis.

Dr. DAVID LEES described cases of sensitisation to arsenobenzol preparations among the nursing staff. Attempts to desensitise had caused acute anaphylactic reactions and in one case death, although there had been no question of the presence of these substances in the tissues. He also referred to the production of aplastic anæmia by these drugs. He did not think that arsenobenzol was the sole cause of jaundice. Alcohol during treatment was certain to produce some type of intolerance. He relied chiefly on the arsenic to stamp out the spirochæte, the bismuth being accessory. There were few cases of intolerance so long as the hygiene of the mouth was attended to, and there should be a dental clinic associated with every venereal disease centre. He did not agree with the doubts expressed by Dr. Sequeira about 606. Malaria was undoubtedly the best pyrexial agent at present available, but it was time to seek for some other method. Pyrotherapy alone, however, was in most cases only alleviating; it must be supplemented by arsenic and preferably by tryparsamide.

Colonel HARRISON, in reply, said that not a scrap of evidence had been found to indicate that modern treatment encouraged neurosyphilis. The incidence might be a question of soil rather than of seed. The average European stopped his malaria with quinine and therefore might develop neurosyphilis in spite of having been in malarious countries. Europeans infected by native women were just as much affected as others.

Dr. GLADYS SANDES opened a discussion on

Methods and Results of Dealing with Antenatal Venereal Diseases.

She analysed 1000 consecutive deliveries from the maternity department of the London Lock Hospital since 1920, and also 34 from the Highbury Hostel attached to the Royal Free Hospital. She concluded from her analysis that syphilis acquired after the fifth month of pregnancy ought not to affect the child so long as the mother was rendered non-infective before delivery; even so, she should not be allowed to breast-feed the child. No special abnormalities were observed during labour or puerperium in treated cases. Gonorrhœa might shorten the second stage of labour and at the same time predispose to rupture of the perineum if the soft tissues had been softened by hot baths and douches during treatment. Puerperal complications were rare. In nearly every case of ophthalmia there had been early rupture of the membranes, prolonged labour, or only a small amount of antenatal treatment for the mother's gonorrhœa.

So long as sufficient time was given to treatment the results seemed to be satisfactory whatever method was used. Pregnancy did not affect the technique of treatment for gonorrhœa, except that douches were given more slowly and at a lower pressure, and, of course, intracervical swabs could not be used. The syphilitic woman should have at least one course of arsenobenzol compounds before delivery. Ideally she should have six weekly injections of 0·6 g. novarsenobillon or its equivalent; an injection of 0·125 g. contramine after the fifth and seventh injections was especially useful for patients likely to react unfavourably to arsenic. A course of bismuth should be given afterwards, or concurrently. Mercury injections were usually painful to pregnant women, but pills could be given in the later half of pregnancy. Bismuth injections were non-painful, efficient, and very safe. If the W.R. came down to plus 30 before delivery, the baby would probably be free of disease; if it was plus 120 or plus 240 the baby would probably be a congenital syphilitic. Any mother who had syphilitic changes in her cerebro-spinal fluid would almost certainly bear a syphilitic baby. The incidence of congenital syphilis was due primarily to the absence or inadequacy of treatment during pregnancy, and therefore an educated public opinion was obviously of great importance in its eradication.

The Elsie Inglis Memorial Hospital.

Dr. MARY MACNICOL described methods and results at this Edinburgh hospital, where there was a ward for ten patients and two out-patient clinics. She emphasised the importance of having wards and clinics for cases of venereal disease attached to every maternity hospital. Amazingly good results followed the effective treatment of syphilis, but the prognosis in gonorrhœa only justified humility and a dogged determination to "make the best of a bad job." It was extremely important to take a blood test from every pregnant woman and to give treatment in every subsequent pregnancy to a woman who had ever had syphilis. Even partial treatment was of great value. The full course given was six weekly injections of 0·3 g. N.A.B. intravenously, and then one monthly injection of 0·45 g. A mixture of grs. 10 of potassium iodide and ℥i of liq. hyd. perchlor. was given thrice daily. Sulfarsenol was given intramuscularly in some cases, but the women preferred the intravenous injections. Bismuth was reserved for the intervals between pregnancies to avoid strain on the kidneys.

In Dr. Macnicol's view the only satisfactory aspect of the treatment of gonorrhœa was the prevention of ophthalmia neonatorum. The danger to the child from antenatal gonorrhœa had been largely removed, but the mother ran the threefold risk of puerperal infection, later chronic cervicitis, endometritis or salpingitis, and subsequent sterility. It was important to avoid the use of instruments for induction or during confinement and to avoid all lacerations of the birth passage. At the Elsie Inglis Hospital the cases were carefully followed up, and the impression was held that careful antenatal treatment did much to prevent postnatal complications. Lactic acid, mercurochrome, and glycerin had been found the most useful drugs, and vaccines were being used increasingly. No douching or swabbing was done for the first ten days after the birth, but free drainage was encouraged by raising the head of the bed. Where induction was necessary and drugs could not be used, the membranes were manually separated and the vagina packed with gauze soaked with mercurochrome.

An interesting paper by Dr. G. G. BUTLER and Dr. G. M. L. SUMMERHAYES discussed antenatal yaws and syphilis in Accra, Gold Coast.

Dr. DAVID NABARRO read a paper on the prevention of inherited syphilis by treatment of the mother. He mentioned special Swedish hospitals for syphilitic mothers, and said that 20 beds at St. Margaret's Hospital had now been set aside for the residential treatment of pregnant women.

Dr. MARGARET BALFOUR and Dr. MYRTLE NORONHA communicated papers on the antenatal treatment of syphlis and the care of the syphilitic mother and child in India, and a brief discussion followed on the advisability of subsidising government hospitals for this purpose.

THE BRITISH EMPIRE CANCER CAMPAIGN.

THE YEAR'S PROGRESS.

THE annual general meeting of the Campaign was held on July 20th at the House of Lords, Lord Reading presiding. The annual report consists of a substantial volume of some 200 pages, mostly made up of accounts submitted by subsidised institutions and individuals of the progress achieved during the year under review. The usual foreword, signed by Lord Reading as chairman of the Grand Council, drawing attention to certain results obtained, has this year an added value, in so far as it is supplemented by page references to the fuller accounts by the actual observers.

Notes on the extensive experimental, clinical, and pathological investigations on the action of radium and X rays, which are being actively pursued in many centres, take up a considerable part of the annual report. Apart from these, among the more outstanding contributions made to the cancer problem by workers connected with this Campaign, the progress of which has not recently been recorded in our columns, are the production of cancer by a pure chemical substance (see p. 197), the detoxication of carcinogenic mineral oils, and the demonstration of hereditary factors in certain forms of cancer in humans.

DETOXICATION OF MINERAL OILS.

In Manchester, under the direction of Dr. C. C. Twort, special attention has been given to the investigation of the causes of mule spinners' cancer, and especially to the cancer-producing properties of mineral oils and the possibility of removing harmful compounds from them in such a manner that they can be used commercially without increasing their cost or diminishing their lubricating qualities.

Investigations on the effect of the treatment of mineral oils with sulphuric acid indicate that though a very large quantity of acid must be used in order completely to detoxicate carcinogenic mineral oils, smaller amounts such as 5 or 10 per cent. by volume are capable of materially lessening the potency of lubricating oils. The committee recommend that the owners of mills should mix into their lubricating oil the necessary quantity of sperm oil or lanolin, and preferably use mineral oil which is as far as practicable saturated. The practical utility of other methods of detoxication, such as exposure to ultra-violet light and radon, appears to be doubtful.

THE HEREDITARY FACTOR IN POLYPOSIS INTESTINI.

At St. Mark's Hospital special attention has been directed to the disease known as multiple adenomata, multiple papillomata or polyposis intestini, a condition in which the mucous membrane of the colon and rectum is studded with adenomatous epithelial proliferations.

Investigations have shown that polyposis intestini is an inheritable disease which is transmitted by both males and females, that both males and females suffer from the disease, and that the inheritance can be traced through several generations. If members of these families survive the other complications of polyposis and ordinary risks of life, they develop cancer of the rectum or colon, usually in the early thirties or forties.

THE EFFECT OF IMMUNE SERA ON CANCER CELLS.

In the Cancer Research Laboratory of the London Hospital, Dr. T. Lumsden has tested a large number of different drugs, bodily secretions, radiations, and other reagents such as heat and cold, on tissue cultures of cancer cells and of normal cells. The only reagent he was able to produce which killed cultured cancer cells without damaging normal body cells seriously, was an antiserum produced by inoculating into an animal the cancer of a different species of animal and then testing this antiserum upon tissue cultures made from a third species of animal. Unfortunately, however, attempts to apply these results in treating cancerous mice failed, for the antiserum could not be injected in a degree sufficiently concentrated to destroy the cancer without causing the death of the mouse. However, such sera can be separated into fractions of which one fraction contains practically all the anticancerous elements in the serum and is much less toxic when inoculated into living animals than the original anti-cancer serum from which it was made. When an implanted tumour is destroyed by inoculating this refined anti-cancer serum into it, gradual reabsorption of the tumour cells occurs and during the process the tumour-bearing animal is rendered immune to recurrences. It is stated that preliminary results of treating mouse cancer, both implanted and spontaneous, raise the hope that ultimate success may be achieved along this line of inquiry, but at the moment consistently good results cannot be achieved. Treatment by anti-cancer serum is not at present applicable to human tumours.

X RAYS AND RADIUM.

X rays and radium have been used not only in experimental therapeutics and in the attempt to discover the way in which they act on biological material, but also to test the nature of the material on which they act. For example, among the pathological investigations at the Middlesex Hospital, the destructive effects of β radiations upon the following bodies have been examined: the infective agent of the Rous sarcoma, the bacteriophage, several types of pathogenic bacteria, some ferments, antibodies, and toxins. The results appear to indicate that the Rous sarcoma agent is not of the nature of a ferment; they do not, however, exclude the possibility that it may be a non-living agent of complex-protein nature somewhat similar to certain toxins.

Among the inquiries pursued in the radiological research laboratories of this hospital are those on the physiological effects of penetrating X rays on animals; the scattering effects of X rays and Gamma rays in different media; and the reactions of the tissues under different degrees of filtration of radium rays. The best filter for all purposes is held to be platinum. At St. Bartholomew's Hospital the effects of radium on the cerebral tissues of the rabbit are being studied by Dr. E. A. Carmichael and Mr. J. Paterson Ross. Radon seeds inserted within the dura mater, radon seeds placed upon the dura mater, and radium needles placed upon the dura mater were the methods investigated. In discussing the clinical problem of treating cerebral gliomata with radium, it is noted that the greatest problem in treating a brain tumour with buried radium is the difficulty of determining the extent of the tumour. In dealing with tumours in other parts of the body it has been found that it is only when the radium can be placed accurately around the growing edge that satisfactory results are obtained. It is so seldom possible to achieve this accuracy in the brain that, it is said, some alternative method may have to be employed, perhaps distance irradiation. It would appear, however, from the reports of workers at the Westminster Hospital, on results obtained with the four-gramme bomb, that this is unlikely to be the method of election in applying distant radiation. Prolonged treatment by this means causes pathological changes in the blood. Histological examination revealed gross damage to spleen, kidney, and lung in every case coming to post mortem after considerable "bomb" treatment, while not a single "bomb"-irradiated cancer could be regarded as cured when examined under the microscope, though several cancers of the breast and uterus had been demonstrated to be comparatively inactive after treatment with needles.

Dr. Warnford Moppett, working in the University of Sydney, has continued his investigations into the biological effects of homogeneous beams of X rays. He has completed studies (*a*) in relation to a phenomenon termed antagonism, (*b*) in relation to the area of tissue radiated, and (*c*) in relation to time. The phenomenon termed antagonism implies a neutralisation between different components of mixed radiation in their biological action. This was deduced from the fact that the allantoic membrane of the chick is about 1000 times more sensitive to homogeneous radiation than to mix radiation. Dr. Moppett has devised a new type of X ray tube, made of metal, with which it is possible to obtain a more homogeneous beam of X rays with a wave-length approximating to the K discontinuity of radium.

Observations of considerable interest have been made by Miss D. Goulston, also working at Sydney, who has applied the radiations from radium to the chorio-allantoic membrane of the chick embryo. When this membrane is irradiated through a window cut in the shell, a pure hypertrophy of the membrane is produced, not uniformly, but in situations determined by the shape of the opening in the shell. Further, in irregular situations, extraordinary hypertrophy of the endoderm, leading to the formation of papillary tumours, multiplication of the ectoderm leading to apparent patchy epitheliomatous structures, and areas of intense hæmopoieses occur. The results of experiments suggest that these results are not due to the gamma radiation from the needles

but possibly either to a modified radiation of longer wavelength, or an action due to secondary waves originating from the components of the shell.

These few samples of the work being done show the activity of the Campaign not only in this country but in its branches and affiliated organisations in the dominions. This report indicates more clearly than any of its predecessors the range and growth of the problem and should stimulate a generous measure of public support.

THE BRITISH PHARMACEUTICAL CONFERENCE.

THE conference met this year at Manchester on July 21st and 22nd. The chairman, Mr. J. H. FRANKLIN, in his address made allusion to the industrial depression in Lancashire and to the possibility that scientific research may provide a solution of the pressing problems of the day; Manchester was associated with the names of many famous men of science, notably Joseph Priestley, Thomas Priestley, John Dalton, and James Prescott Joule.

More than 20 papers were contributed in the Science Section, some of which are here summarised.

POTENCY OF DIGITALIS TINCTURES.

In a paper from the Pharmacological Laboratory of the Pharmaceutical Society on the Variations in Potency and Total Solids of Tincture of Digitalis, Mr. FRANK WOKES said that some analysts had gone so far as to suggest limits of total extractives for tinctures of potent drugs whose active principles cannot yet be determined chemically. He showed the danger of such procedure by means of data obtained on tincture of digitalis; examination of 100 different commercial tinctures showed that there was no definite relationship between the potency and the total solids. The biological assays were all done by the cat method. During the same period in which the 100 commercial tinctures were examined, 24 different samples of digitalis leaves were assayed by the cat method. Eighteen of these samples were British grown and six foreign. The potency of the commercial tinctures ranged from 49 to 200 per cent. of that of the standard tincture and the 24 different samples of digitalis leaf showed a smaller range of potency (63 to 156 per cent. of that of the international standard digitalis powder), but practically the same average potency as that of the 100 tinctures. If percolation is efficient no satisfactory sample of leaf should yield a tincture weaker than about 60 per cent., and English leaves will, in most cases, give tinctures more potent than the standard tincture.

TESTS FOR ERGOT ALKALOIDS.

In collaboration with Mr. H. CROCKER, of the Department of Inorganic Chemistry, Liverpool, Mr. WOKES also contributed a paper on Biological and Spectroscopic Tests on Ergot Alkaloids. The authors gave an account of an attempt to apply the spectroscope to the assay of ergot alkaloids. Parallel tests on solutions of the alkaloids by both biological and spectroscopic methods had shown that they cannot be relied upon to give the same results when estimating the activity of either fresh or deteriorated ergot preparations. Hence the spectroscope could not replace the biological method.

THE SOLUBILITY OF CALCIUM.

Mr. H. BRINDLE (Pharmaceutical Department, Manchester University) dealt with the problem of solutions of calcium, and described a process for the extemporaneous preparation of this product. Calcium lactate is now preferred by many prescribers when a calcium salt is required. It is frequently prescribed in mixtures, and because of the varying solubility of the commercially available article, a clear solution or a mixture containing varying amounts of calcium lactate in suspension may result when the same prescription is dispensed with different samples of calcium lactate. Some prescribers attempt to overcome the difficulty by ordering *Calcii lactas recens*. Since none of the standard text-books consulted gives any information on the method to be adopted, Mr. Brindle's process fills a gap.

The same author contributed a paper on the Volumetric Assay of Lactic Acid B.P. The work therein described was undertaken because a subcommittee of the Pharmacopœia Commission have suggested some modifications in the official process.

FRENCH TINCTURE OF IODINE.

Mr. J. M. WALMSLEY (laboratory of Messrs. J. Woolley, Sons and Co.) referred to a statement in the report of the Pharmacy Subcommittee to the Pharmacopœia Commission, that a new preparation of iodine is required corresponding to the so-called "French tincture of iodine." There was said to be a demand from the medical profession for a solution for the exhibition of free iodine which does not contain any iodine in combination, since it was held that solutions containing iodides were more liable to give rise to iodism than a solution containing iodine alone. Experiments carried out by Mr. Walmsley on a sample of the proposed French tincture of iodine showed that during three months there was a loss of about 15 per cent. of free iodine. In his view it was an error to recommend such an unstable preparation as a simple alcoholic solution of iodine. He believed that the requirements of solutions of iodine are met by the two solutions at present official—tinctura iodi mitis and tinctura iodi fortis.

THE DISPENSING OF SYRUPS.

Some notes on Syrup of Senna were contributed by Mr. THOMAS MCLACHLAN. Many of the present syrups of the Pharmacopœia, he said, are liable to ferment, and it is suggested that more rigid standards should be adopted in the forthcoming pharmacopœia, both as regards manufacture and standardisation of the final product. He referred to the practice of dispensers of rinsing bottles under the tap immediately before dispensing; the result is that water is left in the bottles when these are emptied carelessly. Some syrups and elixirs are prepared carefully with an extremely narrow margin between the amount of sugar necessary to prevent either crystallisation or fermentation, and it is therefore necessary that such syrups should be dispensed in dry bottles.

CAFFEINE AND THEOPHYLLINE.

Messrs. P. A. W. SELF and W. R. RANKIN (laboratories of Messrs. Harrison and Self) quoted experiments which illustrated suitable conditions, and the degree of accuracy obtainable, in the preparation of caffeine from theobromine and theophylline by methylation with dimethyl sulphate. It has long been known that caffeine can be prepared readily from theobromine, but no simple method has hitherto been published by which theobromine can be converted into caffeine with sufficient care and accuracy to serve as a method for the determination of theobromine.

Mr. G. W. FERREY (laboratories of James Woolley, Sons and Co.) contributed a paper on the Theophylline Sodium Acetate of Commerce. One of his objects was to point out the need for careful examination of parcels coming forward as theophylline sodium acetate, as substitution of this article by the isomeric compound theobromine sodium acetate appears to be fairly frequent. One of the consequences of such substitution is that the use of theobromine as theophylline would lead to unexpected clinical results, depriving the patient of the proper treatment.

TESTS FOR MERCUROCHROME.

Mr. H. A. MITCHELL (laboratories of Evans' Biological Institute) read a paper on the Correlation of Chemical and Toxicity Tests on Mercurochrome. The standardisation of mercurochrome involves not only a determination of its germicidal power, but, what is more important, of its toxicity. Wide variations in toxicity occur, and the author's observations lead to the hope that at a later date more uniform batches of pure mercurochrome may become available.

ESTIMATION OF MOISTURE BY DISTILLATION.

Mr. G. MIDDLETON (laboratories of the British Drug Houses Ltd.) contributed a paper on the Estimation of Moisture by Distillation. An apparatus is described in the paper and a figure, drawn to scale, demonstrates its applicability whereby the true moisture contents of drugs can be determined with a greater degree of accuracy than by the drying method.

Mr. T. TUSTINE COCKING, from the same laboratories, read a paper on the Assay of the Official Balsams, and described a new method.

Other Communications.

Mr. F. J. TODD (laboratories of Messrs. Heynes, Matthew Ltd., Cape Town) made suggestions for improvements in the present official monograph on solution of bismuth and ammonium citrate with reference to the method of preparation. The same author contributed some notes on mercuric nitrate ointment and *Liquor Eastonii*. He explained a

method for the preparation of the ointment, which produces a substance with keeping properties superior to those of the official ointment.—Messrs. NORMAN GLASS and A. I. JONES (laboratories of Messrs. Evans Sons Lescher and Webb) contributed a paper embodying work carried out with the primary intention of selecting acids suitable for use in the manufacture of Lysol.—Messrs. L. A. HADDOCK and NORMAN EVERS (laboratories of Messrs. Allen and Hanburys) recommended a method for the determination of strychnine in Easton's Syrup.—Mr. C. MORTON (Chelsea School of Pharmacy) read a paper on the Hydroxy-Acid Complexes of Iron. He expressed his indebtedness to the Senate of the University of London for a grant from the Dixon Fund.—Messrs. ALAN H. WARE and VICTOR SMITH contributed a paper on the Systematic Qualitative Analysis of Powders and Extractives.

PANEL AND CONTRACT PRACTICE

EFFECT OF DANGEROUS DRUGS RESTRICTION.

IF the Home Office withdraws a medical practitioner's authority to possess or prescribe certain drugs under the Dangerous Drugs Regulations, is he thereby prevented from giving efficient medical service to insured persons? Must his name thereupon be automatically removed from the medical list? To these interesting and possibly novel questions the Minister of Health has answered "No." The Minister accepts the findings of the inquiry committee which recently investigated a representation on this point made by the Middlesex insurance committee. In those findings the inquiry committee has carefully examined the obligations of the practitioner under the Terms of Service scheduled to the Medical Benefit Consolidated Regulations, and has come to the conclusion that the restrictions imposed on the practitioner by the Home Office need not prejudice the efficiency of the medical service to the insured.

In the case which raised the question the facts were not in dispute. A most important element in the case was the absence of any evidence that any insured person had suffered by reason of the Home Office withdrawal of the practitioner's authority under the Dangerous Drugs Regulations. The effect of the Home Office order is that the practitioner cannot possess, supply, or prescribe morphine, cocaine, ecgonine, diacetylmorphine (or heroin), or their respective salts, medicinal opium, or any extract or tincture of Indian hemp, or any preparation, admixture, extract, or other substance containing any proportion of diacetylmorphine, or containing not less than one-fifth per cent. of morphine or one-tenth per cent. of cocaine or ecgonine. The respondent practitioner argued that, as he could still lawfully prescribe weaker percentages of morphine and cocaine than those specified in the Home Office order, he could manage for all practical purposes to carry out the duties of panel practice; it was true that he could not prescribe heroin in any proportion whatever, but he contended that heroin was unnecessary and could be replaced by the diluted preparations of morphine, which he was still allowed to prescribe. The inquiry committee agreed that the inability to possess, supply, or prescribe ecgonine or heroin or their respective salts was not fatal to the panel doctor. Ecgonine, they remark, is not in practice used by doctors, and all the therapeutic purposes of heroin can be served by morphine in dilutions under one-fifth or by codeine. Similarly, they continue, extract and tincture of Indian hemp are very little used, and there are satisfactory substitutes. As to morphine and its preparations, the inquiry committee report states that the practitioner could satisfy all his ordinary medical needs by prescribing in strengths below one-fifth per cent. As to cocaine, permitted substitutes, such as novocain, would suffice. As to medicinal opium and its preparations, the respondent practitioner would be able to supply or prescribe these substances by a judicious use of the 15 preparations of opium exempted from the regulations and contained in the Third Schedule of the Dangerous Drugs (Consolidated) Regulations of 1928, and also by using the other forbidden preparations with the permitted dilution (below one-fifth per cent. of morphine). The material passages in the Terms of Service are paragraphs (8) and (10) of Article 9. Paragraph (10) ("duty to prescribe") requires the practitioner to order "such drugs . . . as are requisite for the treatment of any patient." Paragraph (8) ("duty to supply drugs and appliances"), sub-paragraph (*b*), requires him "to supply to a patient where requisite . . . drugs . . . required for immediate administration or application, or required for use before a supply can conveniently be obtained otherwise under the [Medical Benefit Consolidated] Regulations." The inquiry committee thinks (and the Minister agrees) that the Home Office withdrawal of the practitioner's authority does not prevent compliance with the foregoing terms. But there remains sub-paragraph (*a*) of paragraph (8), which requires the practitioner to "supply to the patient, where requisite, drugs which are necessarily or ordinarily administered by a practitioner in person." This provision in the Terms of Service is a much more awkward obstacle. How, for example, is the panel doctor to administer a hypodermic injection of morphine when his authority to possess, supply, or prescribe morphine in such concentration as is necessary has been withdrawn? The necessity to administer morphine in this way, say the inquiry commiteee, is rare, and, perhaps, might not occur in ordinary insurance practice oftener than five or six times a year; but it is of vital importance. The only way of circumventing this obstacle, they conclude, is for the restricted practitioner to call in the assistance of a medical colleague who is not under a similar disability. They think the restricted practitioner can give adequate treatment if he has "a satisfactory working agreement with a colleague to meet a somewhat rare emergency." They apparently do not regard such a course as more objectionable than the not uncommon arrangement for surgical operations which are adjudged to be within the ordinary general medical practitioner's competence and are, therefore, within the terms of the insurance doctor's service, but which certain individual practitioners find themselves unable or unwilling to carry out personally.

It is thus possible to state as an abstract proposition that withdrawal of authority under the Dangerous Drugs Regulations by the Home Office does not mean the automatic removal of an insurance doctor's name from the medical list by the Minister of Health. Perhaps the warning should be added that the withdrawal of authority may nevertheless be a significant element in some future case where an

allegation of specific inefficiency of treatment has emerged. The restricted practitioner may then be represented as working at a disadvantage which can only be removed by skilled and judicious use of permitted drugs to supplement the restricted resources. In the recent case under discussion the practitioner was in a strong position; as there was no evidence that any of his patients had suffered by reason of the restrictions, it was difficult for the tribunal to find that the medical service was inefficient.

EXCESSIVE SICKNESS CLAIMS.

Dr. G. H. CRISP (Oakham, Rutland) writes: "In your issue of July 18th there are two interesting statements. On p. 153 is the now hackneyed diatribe against the panel practitioner by Mr. S. Comyns Carr, K.C., on the issue of alleged fraudulent certificates. On p. 144 is a short account of one of the discussions at the joint conference of the British Hospitals Association and the Incorporated Association of Hospital Officers, at Eastbourne, in which it is stated that the number of patients attending the London teaching hospitals has risen by 10 per cent., and the individual attendances by 30 per cent., since 1920. As we are assured by the approved societies that there has been no increase in sickness, we must conclude that the hospitals also are participants in the alleged fraud. It is difficult to see that they derive any benefit from their lamentable conduct."

CORRESPONDENCE

PRIORITY IN NEUROLOGICAL SURGERY.

To the Editor of THE LANCET.

SIR,—May I, as one of Victor Horsley's former pupils and colleagues, do a tardy justice to his acknowledged greatness both as a neurologist and a surgeon, by pointing out in your columns the inaccuracy of the oft-repeated claim in American publications that Spiller of Philadelphia, in 1898, was the *first* to suggest section of the sensory root of the fifth nerve for the relief of trigeminal neuralgia?

I am the more prompted to do so by the appearance in the *Journal of the American Medical Association* (March 21st, 1931) of the latest article of many by Dr. Charles Frazier, in which he continues to advance this claim, and further states: "The first purposeful section of the sensory root for the relief of trigeminal neuralgia was performed in this clinic." Neither of these claims can be substantiated. For it was Victor Horsley who first suggested the procedure and who first carried it out, exactly eight years prior to the appearance of Spiller's suggestion contained in his paper, written in collaboration with W. W. Keen, in the *American Journal of Medical Sciences*, for November, 1898.

In the *British Medical Journal*, of Dec. 12th, 1891 (p. 1249), in the last of three consecutive articles written in collaboration with Dr. James Taylor and Dr. W. S. Colman, Horsley says:

> "In considering the possibility of relieving cases of inveterate neuralgia, when recurrence of pain had taken place—i.e., after peripheral operations, I thought that one might be able to remove the Gasserian ganglion, *or divide the fifth nerve behind it* (italics mine), and I made, some years ago, dissections to see how far the Gasserian ganglion could be separated from the cavernous sinus. Finding this to be the case (that complete removal of the Gasserian ganglion is not possible) I then considered the possibility *of dividing the fifth nerve behind the ganglion* (italics mine). On trying this on the dead body, I found that it was perfectly feasible."

Horsley then proceeds to describe very fully the various steps of the operation, done on Dec. 11th, 1890, which he deliberately undertook and performed for attacking the sensory root behind the ganglion. Further, in the *Clinical Journal*, of Nov. 3rd, 1897, he refers again to this case and says:

> "In 1890, after consideration of the whole question in a very severe case, I determined to divide the nerve roots behind the ganglion. To attain this object (post-ganglionic section) I endeavoured to raise the temporo-sphenoidal lobe, and succeeded without much trouble in detaching the sensory root from the pons."

I am sure that it will need only this letter to secure from our American confrères their ready and generous acknowledgment of Horsley's priority in both suggesting and carrying out the operation of section of the sensory root for the relief of trigeminal neuralgia.

I am, Sir, yours faithfully,

Harley-street, W., July 15th, 1931. DONALD ARMOUR.

ACUTE ASEPTIC MENINGITIS.

To the Editor of THE LANCET.

SIR,—I was greatly interested in the paper by Dr. John Gibbens in your issue of July 4th, for at the end of last year I saw what must have been a case of acute aseptic meningitis, and had remained in doubt as to the diagnosis.

The patient, a boy aged 6, was taken acutely ill on the night of Oct. 27th with abdominal pain, fever, vomiting, and headache. The onset was so sharp, and the abdominal symptoms so predominant, that it was considered wisest to explore the abdomen, and a somewhat congested and œdematous appendix was removed. However, the symptoms persisted, and I was asked to see the child on Oct. 31st. By that time the signs of meningeal irritation were well marked; the child was irritable, lying curled up, with head slightly retracted, rigid neck, and periodic vomiting. Otherwise there were no abnormal signs.

The cerebro-spinal fluid was under only moderate pressure. Dr. Eric Wordley reported on it as follows:—

> "A turbid fluid, containing obvious pus. No clot present. Cells numbered 80 per c.mm.; 95 per cent. polymorphs; 5 per cent. lymphocytes; protein, 60 mg. per cent.; chlorides, 71 mg. per cent. No organisms were found in the stained films and cultures were sterile."

The boy seemed better as a result of the lumbar puncture, and this was repeated four days later, the cerebro-spinal fluid showing no change.

For two weeks the case ran an extraordinarily variable and irregular course. On some days the temperature would rise to 102°, and headache, vomiting, and general irritability recur with severity; on other days the fever would be slight, only reaching 99°, and the boy would sit up and play with his toys and talk perfectly rationally. His general condition remained remarkably good throughout.

On Oct. 11th there was complaint of a little tenderness over the left mastoid, with slight enlargement of the left pupil and weakness of the left face; but no other evidence pointing to disease of the ears was found. On that day I gave an injection of 1 c.cm. sodium nucleinate solution, and after a slight reaction the temperature fell to normal and the pulse-rate to 88,

and remained at these levels for two days. Then headache and vomiting recurred, and the temperature rose to 102°. I repeated the nuclein, therefore, 0·5 c.cm. daily for a week, and at once the temperature and pulse returned to normal, and the child made an uninterrupted recovery. A lumbar puncture on Nov. 24th gave a clear cerebro-spinal fluid containing a slight excess of protein, and a definite excess of cells (total count not done), 90 per cent. of which were lymphocytes.

In every way the case agrees with those described under the title "acute aseptic meningitis."

I am, Sir, yours faithfully,

Plymouth, July 17th, 1931. W. A. LISTER.

LATENT MAXILLARY SINUSITIS.

To the Editor of THE LANCET.

SIR,—Dr. R. Paterson's lucid and most instructive paper in your last issue (p. 117) wisely stresses the possibility of antral infection being totally unsuspected. During the last two years I have habitually subjected these cavities to transillumination in the course of a routine physical examination, and have notes of 11 cases in which one or both antra were opaque and in which no local symptoms whatever were present. Four of the patients suffered from chronic arthritis, two from bronchitis, two from angina pectoris, one from duodenal ulcer, one from hyperpiesia, and one from asthma. Pus was present in two arthritics and one bronchitic. The latter's chest condition cleared up as the result of antral drainage, but the former two showed no general improvement. Of the remaining cases, exploratory puncture produced no pus, but the wash-out fluid was turbid, and contained *Streptococcus viridans* in three, *Micrococcus catarrhalis* in seven, and was sterile in one anginal patient. A polypoid mucous membrane was found in the cases of asthma and duodenal ulcer, the other antra being treated by wash-outs only. The asthmatic showed no improvement; this is usual. The ulcer, of course, healed on the usual medical treatment, and it is doubtful whether clearance of the antrum had any general beneficial effect.

Although it is probable that many cases of latent maxillary sinusitis are no better, as regards general health, for its discovery and treatment, yet there remains a considerable fraction of unsuspected instances of this condition in which suitable treatment will result in the disappearance of diverse maladies.

In nearly every case adequate transillumination can be obtained by the use of a convenient and inexpensive electrically lighted tongue depressor in conjunction with a good dry battery (I use one supplied by F. Davidson and Co., Great Portland-street), both of which can be carried round with ease, and in fact used for the normal examination of mouth and throat.

I am, Sir, yours faithfully,

A. H. DOUTHWAITE.

Harley-street, W., July 18th, 1931.

To the Editor of THE LANCET.

SIR,—Dr. Paterson's interesting and timely article deserves wide notice. As has rightly been emphasised, the symptomatology in these cases of unsuspected antral infection is usually that of some secondary complication. In a paper read before the Tuberculosis Association last year,[1] I emphasised the fact that cases of secondary "catarrhal" chests ("catarrhal apices," &c.), following antral infections and sepsis generally in the upper air passages, are constantly being notified as tuberculous because of symptoms such as cough, blood-stained expectoration, general malaise, loss of weight, and sweating. If the upper respiratory tract were examined as a routine procedure in every chest case, such a misfortune, no doubt, would be avoided.

The continuity of the whole of the respiratory tract should require little emphasis. Nevertheless, there is an unfortunate tendency to divorce the upper and lower respiratory tracts and treat them in isolated compartments, and the absence of team-work between rhinologists and physicians is to be deplored. Whilst the consequences of a diagnosis of the pulmonary complications of antral infections such as pulmonary tuberculosis may indeed be serious for the patient, we must furthermore recognise that failure to detect latent maxillary sinusitis is responsible for the development of many cases of bronchiectasis and other serious pulmonary complications, the lungs serving as "cesspools" for upper respiratory tract discharges. There is, therefore, urgent need for: (1) More serious team-work by physicians and rhinologists in order that the more distant symptoms of a focal infection shall be recognised. (2) The recognition of an elementary principle—that no examination of the chest is complete unless it includes an examination of the upper air passages, and that in both branches the fullest use of clinical and radiological methods should be employed.

Whilst I have limited my remarks on latent antral infection to its pulmonary complications, its significance in almost every branch of medicine has been illustrated in Dr. Paterson's admirable paper.

I am, Sir, yours faithfully,

Harley-street, W., July 20th, 1931. PHILIP ELLMAN.

[1] See THE LANCET, 1930, i., 628.

A CASE OF IODISM?

To the Editor of THE LANCET.

SIR,—An unusual case of what appears to be iodism came to my notice last week. A man, aged 42, and, a few days later, his wife, came to me complaining of a sore tongue. I was at a loss at first to account for this, as there were no signs of dyspepsia or history of excessive smoking in either case, and the usual remedies gave very little relief.

On her second visit, the wife mentioned the hitherto forgotten symptom, common to both herself and her husband, of a metallic taste in the mouth. I knew they were taking no medicine containing iodine or iodide, and at first could not account for this. On inquiry as to the salt used in the household I was told that for the last 12 months "iodised" salt had been used.

Can the cumulative effect of an unknown dose of iodine or iodide used in the preparation of this commodity have caused the taste in the mouth and the sore tongue in these cases? Also, could it account for some of the cases of acne one treats with very little knowledge as to cause, and lack of response to treatment?

I should be glad to know of any other cases similar to my own.

I am, Sir, yours faithfully,

KATHLEEN BLAKE, M.R.C.S., L.R.C.P.

West Wickham, Kent, July 15th, 1931.

INSULIN PHOSPHOTUNGSTATE BY MOUTH.

To the Editor of THE LANCET.

SIR,—In your issue of Jan. 24th (p. 184) Dr. R. D. Lawrence reported clinical results with oral administration of insulin phosphotungstate as proposed by H. N. Mukhirjee.[1] Having tried the preparation on two cases, Dr. Lawrence failed to observe any lowering of the blood-sugar. About the same time Dr. E. G. B. Calvert tested the substance on a case at the London Temperance Hospital, and the results we obtained were in agreement with those of Dr. Lawrence. The tests were carried out as follows:—

Having first found by a blood-sugar curve the effect of 25 g. of glucose administered to the diabetic patient fasting, a few days later the same patient fasting was given 25 g. glucose and 100 units of insulin phosphotungstate orally, and the sugar curve was again plotted out. A week later the sugar curve was obtained after substituting 25 units of insulin hypodermically for the insulin phosphotungstate, while a fourth curve was obtained after the patient had taken 600 units of insulin phosphotungstate by the mouth. The following are the figures obtained, the same patient being tested and 25 g. of glucose being taken, fasting, on each occasion.

—	1 Without insulin.	2 100 units insulin phosphotungstate orally.	3 25 units insulin hypodermically.	—	4 600 units insulin phosphotungstate orally.
Fasting ..	0·218	0·252	0·218	Fasting ..	0·252
½ hour ..	0·296	0·282	0·228	½ hour .	0·301
1 hour ..	0·38	0·34	0·247	1 hour ..	0·36
1½ hours ..	0·365	0·345	0·252	1½ hours ..	0·394
2½ hours ..	0·355	0·267	0·169	2 hours ..	0·336
3½ hours ..	0·326	0·267(?)	0·081	3 hours ..	0·291
4½ hours ..	0·267	0·242	0·11	4 hours .	0·272

The insulin phosphotungstate was prepared by Messrs. Allen and Hanburys, Ltd.

As the subject is of considerable importance, I am, with the concurrence of Dr. Calvert, sending you these results of our investigations.

I am, Sir, yours faithfully,

HAROLD H. SANGUINETTI.

Hornton-street, W., July 20th, 1931.

RECTAL HÆMORRHAGE IN UNSUSPECTED TYPHOID.

To the Editor of THE LANCET.

SIR,—I have just read with great interest Mr. Hamilton Bailey's note in your issue of June 13th on three cases of Alarming Rectal Hæmorrhage in Unsuspected Typhoid, to which I should like to add my own recent case, referred by Dr. F. R. S. Shaw, of Tuz Khurmatu, which on arrival from up-country had passed the alarming stage, and presented a problem for diagnosis. I cannot do better than quote Dr. Shaw's note of Dec. 16th, 1930:—

Yesterday afternoon Mr. A. was feeling a little faint while working and was suffering from a good deal of flatulence, but was otherwise all right. Later in the evening, he felt rather full in the stomach and still suffered from flatulence. He vomited twice and had three motions. He describes the vomit as coming up easily without any straining or pain, and says it was dark coloured. About 2.30 A.M. I was called out and found him lying in bed in a collapsed condition, cold, very pallid, with a feeble rapid pulse, just like a person who has had a severe hæmorrhage. The history he gives me is as follows: About half an hour previously he had been out to the latrine, had vomited a little and had had a motion much the same as in the afternoon. On returning to the bathroom, he started to pass a very large watery motion without having any control over it. To avoid soiling any place, he sat on the edge of the tin bath and just let everything pass. He then collapsed, but managed to call the person next door, who roused me. There was some water in the bath, so that it was very difficult to see what the motion was like. However, he soiled his pyjamas badly, and it looks to me to be a black pasty material, something like iodex, but blacker. The other noticeable thing was its lack of odour. He gives a history of chronic flatulence, but of nothing else. I can see no reason for the colour of his motion unless it is blood. This morning his temperature is 99° and pulse 100 and feeble. Tongue dirty, and he is very thirsty. On palpation his abdomen shows nothing, but a certain fullness and possibly a little increased rigidity over McBurney's point, but that is rather indefinite. I have done a rough test with tincture of guaiacum and ozonic ether on the stained pyjamas and get a positive reaction for blood.

On admission at 6 P.M. on Dec. 16th the temperature was 99° F., the pulse-rate 76, and the general condition as described by Dr. Shaw. On Dec. 17th, and for ten days thereafter, he passed many liquid stools containing altered blood with very small clots, and once a little recent blood. The Widal reaction on Dec. 17th was positive to *Bacillus typhosus*, *paratyphosus* A, and *paratyphosus* B 1/20–1/40 and negative to all three in 1/80–1/640. As the patient had been inoculated with T.A.B. four months previously this result could not be regarded as other then residual. The Wassermann reaction was completely negative. On Dec. 28th a further Widal showed *B. typhosus* positive 1/20–1/320, neg. 1/640, *paratyphosus* A and *paratyphosus* B remaining as on Dec. 17th, 1930. This result clinched the diagnosis. The patient did well and was discharged on Jan. 13th, 1931.

The Widal reaction is rarely a dependable clinical aid before the end of the second week. With regard to Mr. Bailey's mention of bilharzia—although lower Iraq shows a very large incidence of the urinary type of this disease, I have not seen more than half a dozen cases of the rectal form in 14 years, and in none of these was there a severe rectal hæmorrhage. However, workers in Egypt where, I understand, rectal bilharzia is fairly common, will, I am sure, be able to make an authoritative statement on this point.

I am, Sir, yours faithfully,

G. S. WOODMAN, F.R.C.S. Edin.

The Royal Hospital, Bagdad, Iraq, July 8th, 1931.

RECOVERY FROM STREPTOCOCCAL SEPTICÆMIA.

To the Editor of THE LANCET.

SIR,—Dr. J. A. Ryle's letter requires some comment.

(1) The recovery-rate of 6 cases out of 21 from the Guy's Hospital report was quoted because these appeared to be an unselected series of cases admitted to hospital, and because, as stated by Drs. Ryle and Smith in the report, they served "once more to remind us of the gravity of streptococcal blood-poisoning." Obviously, neither the cases which occurred in the hospital, nor those from private practice (which I do not agree are a parallel series), have statistical value, since (*a*) in some of the cases the clinical diagnosis was not supported by bacteriological evidence; (*b*) in other cases it is simply stated that streptococci were found—whether or not they were hæmolytic streptococci is not mentioned; (*c*) in no case was the hæmolytic streptococcus, when found, typed; (*d*) in some of the cases there was a septic focus which could be, and was, treated surgically, while in others this was not the case; (*e*) the nature of the treatment varied.

(2) Ryle and Smith state in the report "that there are four manifestations which may be regarded

[1] Jour. Physiol., 1930, lxx., 182. See THE LANCET, 1930, ii., 707.

as peculiarly diagnostic of streptococcal fever and as expressing, we believe, infection with a hæmolytic strain."

In view of the facts mentioned above, I am not prepared to agree that sufficient evidence has been produced that any such "diagnostic syndrome" exists for streptococcal septicæmia. Many cases of hæmolytic streptococcal septicæmia occur without one or other of the symptoms mentioned and some without any; in my opinion, any insistence on certain clinical features of the condition militates against the application of what is undoubtedly the most important proceeding—viz., a complete bacteriological examination of the case. How frequently does one hear it said, "It cannot be septicæmia," because the patient has not a certain symptom.

(3) With regard to serum treatment, the article by Ryle and Smith states that "there seems very little evidence in favour of the efficacy of serum therapy," and a considerable warning is given with regard to serum sickness, with reference to a severe and crippling case of this condition. It is not stated, however, how this case was treated with serum, or whether the serum was concentrated or unconcentrated.

I am in entire agreement with Dr. Ryle as to the disappointing results which occur so frequently with serum therapy in cases of streptococcal septicæmia, and also that it is highly probable that the use of other types of sera was a factor in the recovery of the case which we described. I am personally quite satisfied that the change in the serum used was the determining factor in the recovery of the patient, since improvement was immediate after this, although, of course, as with every other therapeutic agent which is used, the difficulty of distinguishing between *post* and *propter* effects exists. I see many cases of diphtheria which *might* recover without the use of antidiphtheritic serum; on the other hand, they *might* die. The important thing is to investigate why, in a limited number of cases of septicæmia, serum does appear to have a specific effect, while in others it has none.

I do not agree with Dr. Ryle that a careful study of the natural history and course and variable mortality of streptococcal septicæmia will yield an advance of our knowledge of serum therapy, unless with this is combined a most exhaustive study of the various types of hæmolytic streptococci, and further investigation as to the possibility of more specific antitoxic sera for the different types than we have at the present time.

I am, Sir, yours faithfully,

A. H. G. BURTON.

Health Offices, Ilford, July 21st, 1931.

BACTERIOLOGICAL CONTROL OF MILK-SUPPLIES.

To the Editor of THE LANCET.

SIR,—Whilst the findings of Prof. McIntosh and Dr. Whitby, recorded last week in THE LANCET, are of considerable importance, it is sincerely to be hoped that they will not be the cause of any precipitate, and possibly quite unwarranted, action on the part of public authorities. In the absence of either experimental or epidemiological evidence that the two organisms mentioned have any sanitary significance, it would be advisable to defer reconsideration of the question of standard nutrient medium until the matter has been investigated further, preferably in coöperation with the large dairy companies. When the lemco-peptone-agar medium was first recommended by the American Public Health Association, the Milk Control Committee, of which I was a member, well recognised that this medium did not give the total number of organisms present, but we considered that this disadvantage was more than offset by certain advantages only to be obtained by the use of ingredients of comparatively constant composition (lemco and peptone).

The main desideratum as regards the control of milk counts is that the standard process shall be capable of giving approximately the same result when used by different workers; if this condition is not fulfilled, chaos and confusion will result, and other considerations must be subordinated to this until a superior nutrient medium is evolved.

The experience recorded by Prof. McIntosh and Dr. Whitby reminds me of a somewhat similar one which I encountered in Toronto during the winter of 1911–12. In addition to the standard media of the American Public Health Association, I was using a gelatin medium for making counts on the water filter effluents and during a very cold spell, when the lake was partially covered with ice, I was alarmed to find that the bacteria per c.cm. had suddenly increased from 15–20 up to several thousands, although the agar count at blood-heat and the *B. coli* content remained quite normal. Investigation showed the anomaly to be due to a psychrophilic, non-pathogenic micrococcus that was, fortunately, very susceptible to chlorine treatment, which formed the second line of defence in the system of water purification.

I am, Sir, yours faithfully,

Buxton, Derbyshire, July 21st, 1931. JOSEPH RACE.

TUBERCULOUS BACILLÆMIA.

To the Editor of THE LANCET.

SIR,—In the annotation on this subject on p. 140 of your last issue you express the opinion that it is highly desirable that Prof. Loewenstein's work should be repeated in this country. Your readers will be interested to learn that Dr. H. Moos Schwabacher has made further progress with the investigations reported in THE LANCET of May 23rd, and that she has now obtained tubercle bacilli in pure culture in three cases, using a modification of Loewenstein's original technique—I am, Sir, yours faithfully,

KENNETH ECKENSTEIN,
Hon. Pathologist to the French Hospital.

Shaftesbury-avenue, W.C.2, July 20th, 1931.

OPENING OF KING GEORGE HOSPITAL, ILFORD.—On Saturday last the King, who was accompanied by the Queen, opened the new hospital named after him at Ilford. Their Majesties also visited the Dagenham Health Centre of the hospital.

CITY MATERNITY HOSPITAL.—A committee has been appointed by the governors of St. Bartholomew's Hospital to consider a proposal for the amalgamation of the London Maternity Hospital, City-road, which was founded in 1750. The proposal is to erect an entirely new hospital either on the St. Bartholomew's estate or on an adjoining site. It is stated that the scheme would entail a capital outlay of approximately £120,000 with a maintenance cost of about £30,000 per annum. The 71 beds in the City-road Hospital are stated to be totally inadequate, and the suggested building would provide 130. Moreover, the noise of traffic is troublesome to the patients. St. Bartholomew's is in urgent need of a maternity hospital close by for teaching purposes—it has only 17 maternity beds. The site of the City-road Hospital is the property of St. Bartholomew's, and it is thought that it could be sold for about £50,000; the maternity hospital also has available money.

PUBLIC HEALTH SERVICES

LOCAL AUTHORITIES AND ADVICE ON BIRTH CONTROL.

LAST March the Minister of Health issued a Memorandum [1] on the use of local authorities' institutions for advice on methods of birth control. He finds that certain misconceptions have arisen about the views there expressed, and the Ministry has accordingly sent a supplementary circular to maternity and child welfare authorities, bringing the following points to their notice.

It is necessary, the Minister believes, to emphasise the statement in the Memorandum that the Government are advised that local authorities have no general power to establish birth control clinics as such. Under the Maternity and Child Welfare Act, 1918, their powers are limited, so far as women are concerned, to making arrangements for attending to the health of expectant mothers and nursing mothers. If an authority decides to provide facilities for giving birth control advice at a maternity and child welfare centre the use of these facilities must be strictly incidental to the purpose for which the centre is established, and they can be made available only for married women who are either expectant or nursing mothers already in attendance at the centre and whose cases further pregnancy would be detrimental to health.

If action is taken under the Public Health Acts to establish a clinic at which medical advice and treatment would be available for women suffering from gynæcological conditions, the use of any facilities provided at the clinic for giving advice on contraceptive methods must be strictly incidental to the purpose for which the clinic is established—viz., the treatment of sick persons. Only women who need medical advice and treatment for gynæcological conditions can properly be admitted to the clinic, and contraceptive advice can properly be given only to married women in attendance at the clinic in whose cases pregnancy would be detrimental to health. It is obviously desirable for a local authority to obtain the services of a medical officer specially experienced in the clinical advice and treatment needed at a gynæcological centre of this sort.

The Minister does not consider it desirable that a gynæcological clinic should be established at a maternity and child welfare centre, and if an authority is satisfied that there is need for such a clinic it should be provided in separate premises or at a hospital. Expectant mothers and nursing mothers in attendance at maternity and child welfare centres who are found to need medical advice and treatment for gynæcological conditions could then be referred to the clinic. He thinks it important that no existing officer of a local authority should be prejudiced in any way by a decision of the authority to provide facilities for birth control advice within the limits laid down in the Memorandum. This work should not be regarded as falling within the scope of the normal duties of the medical officers of a local authority, and they should be free to undertake it or decline it.

[1] See THE LANCET, 1931, i., 776.

SCHOOL MEDICAL SERVICE.

—	No. on roll.	Average attendance.	Routine inspections.	Special exams. and reinspections.	Percentage of defects.
County of Warwick..	—	—	10,839	8,975	23·3
County of Brecon ..	9,076	8,103	2,639	1,346	12·31

County of Warwick.

Dr. A. Hamilton Wood discusses many topics which are in the minds of all concerned with school medicine to-day.

He notes the great extension of facilities for care and treatment that have been made in his area. He believes that the variations in the number of defects found are largely attributable to personal factors—changes in staff yield differences in standard which cannot immediately be made uniform. Figures for defects of vision and other conditions not readily affected by the personal factor in diagnosis have been comparatively constant. He suggests that the high percentage of other defects in his county may be partly explained by the increase of throat affections, due to climatic conditions or to some nutritional defects in early childhood, leading to an enlargement of the lymphoid tissue of the nasopharynx, which in turn is subject to inflammation when influenced by excessive or continued rainfall. Dr. Wood says that as a result of his appeal in his last annual report for additional medical staff Dr. Kelly was appointed last year, and he records also the recent appointment of an additional whole-time dentist and three whole-time dental nurses. The percentage of acceptances of tonsillectomy and dental treatment are regrettably small. The dentist obtained on average only 30·4 per cent. acceptances compared with 58·5 for the whole country in 1928. One obstacle which may be an effective deterrent during this period of trade depression is the charge of 1*s*. It might be urged that dental treatment is really a preventive service, and thus should be given free, as is the treatment of infectious diseases; but since the Medical Treatment Act makes some charge obligatory, the experiment of lowering the sum to 6*d*. might prove instructive.

The school dentist in his report attributes the low percentage of acceptances to the fact that a general public dental service in Warwickshire is only of recent origin; the parents are so ignorant of modern conservative methods that they have a general distrust of fillings, which they seem to view as the first step towards the destruction of a tooth. Attempts to interest parents have been unsuccessful, and since it is realised that they often follow the wishes of the children, attention has been concentrated on lectures in the schools. Head teachers have done much, and can do still more, in influencing children and parents to accept treatment. As to tonsillectomy, the reasons for a percentage of acceptances as low as 50 are thought to be: (1) that the parents discredit the advice of the medical officers; against such a view must be put the fact that the number of parents attending the medical inspections in the county is steadily increasing; (2) the charge of 5*s*.; (3) the inconvenience of taking the child to hospital; (4) the occasional discomfort and disturbing after-effects. This last factor could be diminished if all hospitals admitted patients for at least 48 hours.

County of Brecon.

The area with which Dr. H. Davies has to deal contains for a whole county a relatively small school

population, and there are lacking many of the facilities found in some progressive centres of population. The authority has no special schools of any kind of its own, no nursery schools, no X ray installation for the treatment of ringworm, no organisers of physical training, and no coöperation of voluntary societies except the N.S.P.C.C. Since all such valuable agencies are lacking, and since Dr. Davies, who is medical officer of health for the county with only one assistant, has to carry out all his duties over a widely-scattered area, it would not be surprising if the ascertainment of defects were not so strict as in some other places. The fact that the percentage of children found to have defects is only 12·31 compared with 20·7 for England and Wales (in 1928), and that only three cases of otitis and defective hearing were noted, may be due not so much to the superior health in Brecon as to the exigencies of the school medical service.

On the subject of malnutrition, it is recorded that the committee is concerned about the physical welfare of the children. Milk is being supplied to ill-nourished children in many of the schools, and frequently cocoa also, at a cheap rate. Many of the school buildings are defective, some of them so unsatisfactory that, in the opinion of Dr. Davies, proper conditions of light, warmth, and fresh air could be obtained more cheaply by erecting new ones than by adaptation. In other places, however, quite small alterations provide marked improvements. Repainting walls in a clean light colour instead of the dark buff may not only make a room more cheerful but raise the reflective power of the walls by over 40 per cent. Cleaning has been made much easier by the removal of heavy desks and furniture and by other simple devices. He fears, however, that the benefits derived from improved school buildings are being negatived by bad housing conditions.

County of Rutland.

Dr. Christopher Rolleston, who is responsible for Rutland as well as the Soke of Peterborough, is outspoken in his condemnation of some of the conditions he has to cope with. He says that there is hardly a single school in the county which comes up to modern requirements, and that grossly insanitary conditions still exist in the shape of privy vaults in certain schools. The water supply also is quite inadequate, but Dr. Rolleston considers that the question of water supply to schools must wait upon a general scheme for the whole county, or even possibly for the whole of rural England. He cites many improvements made during the past few years. The new central schools are temporary buildings—"old army huts, but they seem to answer their purpose, and they have the advantage of not lasting for centuries. The hygienic ideas of one generation become the abomination of desolation of the next." He draws a striking picture of the development of the school medical service from 1910, when there was no school nurse, to the present time. The arrangements for treatment have progressed gradually during this period. During the year the committee continued the policy of asking for small payments for the various forms of treatment (other than X ray treatment) from the few parents whose means are within the prescribed income limit.

The provision for dentistry has been inadequate, but it should be possible to complete the round of the school in a year now that the working time of the dentist has been increased. The advice received from a dental expert attached to the Board of Education was that dental attendants should invariably be provided, though it was considered unnecessary that the attendant should be a trained nurse. The essential qualities were said to be adaptability, neatness, method, intelligence, and some knowledge of clerical routine. Dr. Rolleston's comment is that such paragons are not easily to be found. He adds that the committee "provided the school dentist with help which proved nothing more than an encumbrance."

The percentage of parents present at the examination of their children was over 80, which may be regarded as a tribute to the personality of the medical officer. Dr. Rolleston makes some observations on the teaching of hygiene in the schools; on the whole he is satisfied with the effort made, but considers that hygienic teaching can scarcely be said to occupy any definite place in the course of instruction. He praises the valuable instructions given by the busy school nurse, and proposes to supplement the teaching by individual talks to each child examined.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED JULY 11TH, 1931.

Notifications.—The following cases of infectious disease were notified during the week: Small-pox 45 (last week 56); scarlet fever, 1378; diphtheria, 892; enteric fever, 61; pneumonia, 618; puerperal fever, 39; puerperal pyrexia, 105; cerebro-spinal fever, 44; acute poliomyelitis, 6; encephalitis lethargica, 10; dysentery, 27; and ophthalmia neonatorum, 112. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on July 14th–15th was as follows: Small-pox, 64 under treatment, 1 under observation (last week 97 and 1 respectively); scarlet fever, 1125; diphtheria, 1471; enteric fever, 18; measles, 143; whooping-cough, 448; puerperal fever, 39 (plus 12 babies); encephalitis lethargica, 206; poliomyelitis, 2; "other diseases," 133. At St. Margaret's Hospital there were 12 babies (plus 3 mothers) with ophthalmia neonatorum.

Deaths.—In the aggregate of great towns, including London, there were no deaths from small-pox, 2 (1) from enteric fever, 18 (0) from measles, 6 (1) from scarlet fever, 17 (3) from whooping-cough, 29 (2) from diphtheria, 35 (8) from diarrhœa and enteritis under two years, and 20 (3) from influenza. The figures in parentheses are those for London itself.

Three deaths from meningococcal meningitis were registered in London, one in an infant and the others in age groups from 25 to 45. There were two deaths from measles in Liverpool, Leeds, and Sunderland. Four fatal cases of diphtheria were reported from Leeds, three from Birmingham, and two each from Manchester and Salford. Diarrhœa and enteritis under two years caused three deaths in Sunderland, and two each in Stoke-on-Trent, Birmingham, Leeds, Sheffield, and Hull. Four deaths from influenza occurred in Birmingham.

The number of stillbirths notified during the week was 285 (corresponding to a rate of 41 per 1000 births), including 43 in London.

ANTS IN A HOSPITAL.—At a meeting of the Glasgow corporation recently complaints were made that there is a visitation of ants at Shieldhall fever hospital. It was stated that children's cots had been invaded, and the food in patients' lockers speedily became infested. The convenor of the public health committee explained that steps are being taken to deal with the ants, and that the creatures were harmless and "did not attack the patients."

EXTENSION OF ASHINGTON HOSPITAL.—On behalf of the Central Miners' Joint Welfare Committee, which made a grant of £10,000 towards the cost—£15,000—extensions of this hospital have been formally handed over. The enlargements comprise a new orthopædic department, an improved out-patients' department, a new theatre, and various accessories. During 1930 over 1000 patients were admitted, there were 22,000 out-patients, and more than 14,000 orthopædic cases were dealt with.

PARLIAMENTARY INTELLIGENCE

NOTES ON CURRENT TOPICS.

HOUSING IN RURAL AREAS.

THE House of Commons on July 16th considered the Housing (Rural Authorities) Bill on Report. On July 17th the third reading of the Bill was agreed to without a division.

BETHLEM HOSPITAL BILL.

On July 17th, in the House of Commons, Mr. LANSBURY, First Commissioner of Works, moved the second reading of the Bethlem Hospital (Amendment) Bill, which has already passed through the House of Lords.

Mr. A. M. SAMUEL said he welcomed the Bill and the opposition would be glad to do all they could to facilitate its passing into law. It was due to a gracious and generous action and one that the House would approve.

Mr. STRAUSS said he could not help expressing regret that it had been found necessary to introduce the Bill to legalise the arrangement which had been come to with the donor of the park, the borough council, and the County Council. He did so because there was a very serious shortage of open spaces in that area, and those who were interested in the district were very jealous of every single acre of open space available. Under the force of necessity, almost, it had been agreed that a portion of the Bethlem Hospital site should be retained for the Imperial War Museum, but the people of Lambeth and Southwark would very much rather have an open space to play in than a war museum in their area.

Mr. LANSBURY said that the Bill was going before a select committee because it was a private Bill and might affect private interests. He believed that some part of the present buildings would be destroyed. The fact was that there was no proper accommodation for the museum where it was at present. In reply to Mr. Strauss, he wished to say that they wanted every inch of land they could get for the children. They must live somewhere and they must be sheltered, and if they had pulled down the building entirely they would have had to put up a shelter for them.

The Bill was read the third time and committed to a select committee of five members.

The money resolution in connexion with the Bill was afterwards agreed to in committee.

STERILISATION OF MENTAL DEFECTIVES.

On July 21st, in the House of Commons, Major CHURCH asked leave to introduce a Bill to enable mental defectives to undergo sterilising operations or sterilising treatment upon their own application, or that of their spouses, or parents or guardians. He said that those associated with him realised that in making this request for permission to introduce this Bill they were asking the House to do something which could be regarded as being in advance of public opinion. (Hear, hear.) They realised that they had got to convert a large section of the people to a full appreciation of the principles underlying the Bill. His opinion, although it was not that of all those associated with him in promoting this measure, was that this was merely a first step. It was a step in order that the community as a whole might be able to make an experiment on a small scale, so that later on the community would have the benefit of the results of the experience gained and be able to come to conclusions before compulsory sterilisation proposals for unfit persons were put forward.

The Bill was based on the willingness of those suffering from mental deficiency to undergo voluntarily an operation which would prevent them bringing children into the world. The Bill provided every reasonable safeguard for the voluntary principle. In the first place, the patients themselves must consent to the operation, or their spouses, or parents or guardians, must agree to the operation. In the third place there must be consent on the part of the Board of Control, and finally the operation could only be carried out after approval had been given by a judicial authority, such as a bench of magistrates. The operation would not be the mutilation usually associated with sterilisation. It was devised in order that the emotional life of the person operated upon should not be affected in the slightest degree, but that the patient should be effectively prevented from bringing children into the world. On the male there would be a very simple operation, which could be easily done in five minutes with a local anæsthetic, and there was no danger attached to it. Out of 5000 cases dealt with by the State of California there was only one death, and that was under the anæsthetic. In the case of women it was a rather more serious operation, but no more dangerous than an operation for appendicitis.

The Mental Deficiency Committee set up in 1925, and whose report was published in 1929, estimated that the certifiable mentally defective persons in the country numbered 300,000, of whom 25,000 were in institutions and another 50,000 were under the control of guardians. The committee had no recommendations for dealing with the remainder, but they recommended that institutions should be provided for one third of them—i.e., for 100,000 persons. That in itself was a tremendous drain upon the public purse and would tax the capacities of the local authorities for many years to come. But even if institutions were provided for 100,000, what was to be done with the other 200,000 ?

The headmaster of one of the schools for mental defectives had stated that they went out into the world at the age of 16, and that within two or three years 25 per cent. of them had been before magistrates' courts or children's courts in various parts of the Metropolis. He also stated that three or four years after leaving school many of these children had married and had had children, or had had children without being married. It might be urged that mere sterilisation was not enough and was not a cure for the problem of mental disease. He and those associated with him did not suggest that it was ; but they suggested that since knowledge compiled as to the ancestry of mental defectives in a number of different states and countries showed that anything from 45 to 80 per cent. of the mental defectives had inherited defective germ plasm, it would be advisable to take the risk of sterilising the defectives, and that in the course of a generation or so their number could be reduced to measurable size. If the Bill was printed hon. Members would see that so far from attempting to violate the laws of morality all it proposed to do was something which large numbers of social workers, 53 of the borough councils in the country, whole masses of opinion in the medical and scientific professions, and many biologists believed to be the right course.

Dr. MORGAN urged the House not to approve what he said was anti-working-class legislation. Nature had its own way of dealing with mental defectives—namely, by limiting their progeny. (Cries of "No.") They did not want nosey Parkers poking about, or to be influenced by eugenic nightmares. If what Major Church said was true what became of the great scientific doctrine of the survival of the fittest ? There were two sources of mental defectives—those high up and those low down. It was well known that high-grade defectives had a high percentage of fertility. The cause of low-grade defectives was living under subnormal conditions

and being submerged in poverty. There were defective germ plasms in every family; and it was computed that the chance of a defective paternal and maternal plasm uniting was one in five millions. The House should reject this Bill and leave these poor people to be dealt with by the alternative method of segregation and socialisation.

The motion for leave to introduce the Bill was rejected by 167 votes to 89—majority 78.

HOUSE OF COMMONS.

WEDNESDAY, JULY 15TH.

Education of Mentally Defective Children.

Major CHURCH asked the President of the Board of Education the total number of children under instruction in schools for the mentally defective; whether any of these schools were non-provided; what proportion of the local education authorities provided special schools for mentally defective children; up to what age the attendance of the children admitted to such schools was compulsory; if statistics were available distinguishing between retarded children and children afflicted with known mental diseases; and if information was available with regard to the after-careers of those who had attended schools for the mentally defective.—Mr. LEES-SMITH replied: On 31st March, 1930, there were 15,500 children under instruction in special schools for the mentally defective. Nine of these schools are non-provided. Twenty-seven per cent. of the local authorities in England and Wales provide such special schools. Attendance is compulsory up to the age of 16. Statistics are available showing the numbers of children certified as suitable for education in special schools for the mentally defective. These are children who suffer from a severe degree of retardation, or incomplete development of the mind. There are no separate statistics in regard to children suffering from "known mental diseases," unless severe retardation itself is so regarded, but they are very few in number and usually fall outside the scope of the educational system. Records of after-careers are kept as far as possible by the local education authorities and voluntary bodies which maintain special schools.

Reception Hospitals for Mental Patients.

Mr. SORENSON asked the Minister of Health the number of reception hospitals that now existed and that had been opened during the last 12 months in connexion with public mental hospitals, and the total number of beds available in both cases.—Mr. GREENWOOD replied: Admission hospitals have been provided or are under construction at about a quarter of the public mental hospitals. Complete statistics on the other points raised in the question are not at present available, but I will make inquiry and communicate further with my hon. friend.

New Serum for Puerperal Fever.

Mr. RAMSBOTHAM asked the Minister of Health if his attention had been called to the value of a new serum for preventing puerperal fever in the case of confinements; whether he intended to appoint a commission of inquiry; and whether any tests in this antitoxin had been made in the public institutions in this country and, if so, with what results.—Mr. GREENWOOD replied: I understand that the serum to which the hon. Member presumably refers has been and is being used for the treatment of patients in this country, but it is not yet possible to arrive at any definite conclusions as to its value. A considerable amount of research into the causes and treatment of puerperal fever is being undertaken, and is being carefully watched and assisted by the Medical Research Council and by my department. I do not consider, therefore, that there is any necessity for the appointment of a special commission of inquiry into this subject.

A Treatment for Tuberculosis.

Mr. SMITHERS asked the Minister of Health whether his attention had been directed to a treatment for tuberculosis called umckaloabo; and whether his department had examined it, and with what results.—Mr. GREENWOOD replied: The answer to the first part of the question is in the affirmative and to the second part in the negative. I am advised that the claims made in regard to this alleged form of treatment for tuberculosis do not appear to differ in character or degree from those made for many other so-called "remedies" which have been advertised from time to time and afterwards found to be valueless. I do not consider that there is sufficient ground for instituting a clinical investigation into its value.

Mr. SMITHERS: In view of the extraordinary success that is claimed for this treatment will not the right hon. gentleman at least ask his medical officer to look into it and report upon it?

Mr. GREENWOOD: Information in my department goes to show that the claim made cannot be sustained.

Lead Poisoning.

Mr. GRAHAM WHITE asked the Home Secretary the number of cases of lead poisoning notified during 1930 under the regulations of the Lead Paint Act and the number of cases which terminated fatally.—Mr. CLYNES replied: The number of cases notified during 1930 was 66. Thirteen of these cases terminated fatally.

Mr. WHITE: Is the right hon. gentleman satisfied that these regulations are working satisfactorily?

Mr. CLYNES: I have no reason to doubt that on the whole they are, but I shall be glad to receive information of particular instances where they are not.

MONDAY, JULY 20TH.

Mentally Defective Children.

Mr. GORDON MACDONALD asked the Minister of Health the number of mentally defective children in certified institutions in England and Wales at the latest date for which the information was available, and for each of the five years ended March 31st, 1931, giving separate figures for Lancashire.—Miss SUSAN LAWRENCE replied: The following are the figures asked for. The total number of mental defectives in certified institutions in Lancashire and in England and Wales respectively during the last five years was as follows:—

On Jan. 1st.	In Lancashire	In England and Wales.
1926	3,581	12,766
1927	3,627	13,342
1928	3,712	14,099
1929	3,770	14,840
1930	3,858	15,664
1931	3,949	17,200

It is regretted that separate statistics for children are not available, but it is estimated that of the total numbers given above approximately 15 per cent. are children under 16 years of age.

TUESDAY, JULY 21ST.

O.T.C. Camps and Cerebro-spinal Meningitis.

Miss PICTON-TURBERVILL asked the Secretary of State for War whether the annual camps of the Junior Division of the Officers' Training Corps were being cancelled this year, and if so, for what reason.—Mr. T. SHAW replied: Owing to the continued incidence of cerebro-spinal meningitis throughout the country it is considered inadvisable to collect boys of a susceptible age in camps in large numbers. Boys who would have attended camp but for the cancellation will, for purposes of "efficiency," be deemed to have attended.

Meningitis in the Army.

Mr. MARJORIBANKS asked the Secretary of State for War the number of cases of deaths from meningitis in the British Army stationed at Home during each of the last three years.—Mr. T. SHAW replied: The number of deaths from cerebro-spinal meningitis in the British Army at Home during the years 1928, 1929, and 1930 was 2, 9, and 10 respectively.

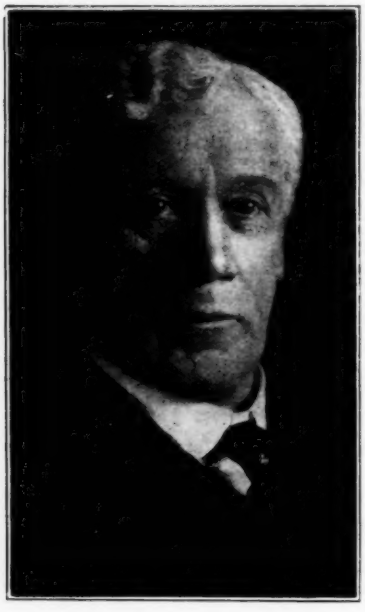
WOLVERHAMPTON HOSPITAL CONTRIBUTORY SCHEME.—A contributory scheme for Wolverhampton Royal Hospital is under consideration. The scheme provides for membership under the following scale: Limit of income £200 a year, or £4 a week, applicable to single persons over 16 years of age, and widows or widowers without children under 14 years of age; limit of income £250 a year, or £5 a week, applicable to married couples without children under 14 years of age, and persons with one dependant under 14 years of age; limit of income £300 a year, or £6 a week, applicable to married couples with a child or children under 14 years of age, and persons with more than one dependant under 14 years of age. The scale of contributions under the scheme is: For persons between 14 and 16, 1*d.* a week; persons between 16 and 21 and females over 21, 2*d.* a week; for others, 3*d.* a week. In the latter cases, the wife, or dependant, or children up to 14 years of age, would be eligible for hospital benefit.

OBITUARY

FRANCIS RICHARDSON CROSS, M.B.Lond., F.R.C.S.Eng., LL.D.

Mr. Richardson Cross, of Bristol, whose death on July 12th we announced last week, was held in high esteem as an ophthalmic surgeon. His practice and his reputation extended far beyond the West of England, and he was long regarded as one of the leading men of his specialty.

The son of Joseph Cross, vicar of Merriott, in Somerset, F. R. Cross was born there 83 years ago, and was educated at Crewkerne Grammar School. Thence he went as scholar to King's College, London, and qualified as M.R.C.S. in 1871. The next seven years were variously and usefully employed in clinical and academic appointments. He was house surgeon at King's College Hospital and resident medical officer at St. Pancras Dispensary; he was evening lecturer in physiology, assistant demonstrator in anatomy, medical tutor, and sub-dean at King's College. Though he attended the Royal London Ophthalmic Hospital as clinical assistant, it was as lecturer on anatomy that he went back to the Bristol Medical School, and it was as a general surgeon that he joined the staff of the Bristol Royal Infirmary in 1878. Elected full surgeon in 1879, he carried on general work for six years, and then resigned to take up the new post of hon. ophthalmic surgeon. Here he managed his department with ability and served the Infirmary well, both professionally and as an organiser. Although he left the active staff in 1900, he continued his association with the hospital, and became vice-president in 1919. He also did a great deal for the Bristol Eye Hospital, where he was surgeon for a long period, and for the Royal School for the Blind. At the same time, through his connexion with Bristol Medical School, he played an important part in the foundation of Bristol University. He was lecturer and subsequently reader in ophthalmology, and fittingly received the honorary degree of LL.D. He was also elected a Fellow of King's College, London.



MR. RICHARDSON CROSS.

[Photograph by Lafayette.

From an early stage in his career Mr. Cross was a notable contributor to the journals of his specialty, and sound work soon earned him a distinguished place among his colleagues. He was elected a member of the Council of the Royal College of Surgeons of England in 1898, and served in this capacity until 1914, when he took office as president of the Ophthalmological Society of the United Kingdom. He delivered the annual oration of the Medical Society of London in 1901, the Bradshaw lecture of the College of Surgeons in 1909, the Long Fox lecture at Bristol in 1915, and the Doyne lecture at Oxford in 1920. In his relations with societies and their members, as in his practice and social life, he was as happy in manner as in intention. As a surgeon, perhaps he owed his success not so much to his own original work as to his ability to assimilate what was sound and useful in the practice of others. He was tall and finely built, with a charming voice, and his patients instinctively knew that he was a kindly man. He inspired them also with confidence. This and a shrewd judgment enabled him to get done what was required in serious cases and to ensure that his directions were carried out.

A man of sound common sense, Cross was elected to a large number of the more important public offices in the city of Bristol. He was Sheriff of Bristol in 1897, and was formerly president of the Grateful Society and the Dolphin Society, and a member of the Council of Clifton College. A keen sportsman, he long followed the Duke of Beaufort's hounds, and latterly took much interest in the breeding of stock.

Mr. Cross married in 1889 Eva, daughter of Captain Hawkes, R.N. She died in 1920, and they leave three daughters.

MEDICAL NEWS

University of Oxford.

On July 19th the following degrees were conferred:—

M.Ch.—T. H. Sellors and B.G. Scholefield.

B.M.—G. H. Bateman, F. Bicknell, H. de B. Kempthorne, R. B. Scott, T. R. Plummer, H. S. Atkinson, R. D. Newton, R. R. Bomford, Elizabeth C. M. Brunyate, Olive M. Capper Johnson, and (Mrs.) Winifred Pitkin.

University of Cambridge.

Mr. David Keilin, Sc.D., F.R.S., at present university lecturer in parasitology, has been elected to the Quick professorship of biology, for three years, in succession to Dr. G. H. F. Nuttall, F.R.S., who retires on Oct. 31st. Dr. Nuttall has held the professorship since 1906 when it was founded. It is laid down that the professor shall devote himself to the study of parasitology.

Royal Faculty of Physicians and Surgeons of Glasgow.

At the meeting of the Faculty on June 1st the following were admitted to the fellowship: Amar Chand Bhardwaj (Simla), John Aloysius McCann (Liverpool), and William Patrick (Glasgow).

University of London.

At a meeting of the Senate on July 15th, Mr. Cyril Lodowic Burt, D.Sc., was appointed to a university chair of psychology tenable at University College.

The Rogers prize of £100 was awarded to Dr. R. W. Fairbrother.

At recent examinations the following candidates were successful:—

DIPLOMA IN PSYCHOLOGY.

Hilda Bristol, Rachel M. Creed, Annie M. Gibson, Margaret A. Leiper, Annie D. Paterson, Doris F. Robinson, Jugal Singh, Jeannette B. Shaw, and Diana V. Spearman.

DIPLOMA IN BACTERIOLOGY.

Dora C. Colebrook, Catherine B. Hendry, C. O. Karunakaran, A. R. Martin, *A. E. Oxford, F. W. Priestley, W. D. B. Read, George Robinson, and Pauline C. Witherow.

* Awarded a Mark of Distinction.

University of Durham.

At recent examinations the following candidates were successful:—

M.D.—C. F. Fairlie, George McCoull, L. F. O'Shaughnessy *(in absentia)*, T. S. Severs, G. E. Stephenson, H. G. Ungley, A. H. Wear, and J. H. Weir.

M.D. for Practitioners of 15 years' standing.—J. W. Irvine.

M.B., B.S.—Hugh Bannerman, W. C. D. Bewick, Robert Bewley, J. I. M. Black, T. H. Boon, Gladys M. Brice, J. L. Burn, C. F. Down, W. P. Dunn, W. L. Gardner, J. W. Gibson, John Giles, T. R. Harlan, H. F. Harvey, N. V. Hepple, A. R. Holtby, A. D. Kelly, J. J. H. Lowe, Elizabeth S. Malcolm, Eileen G. Marshall, J. A. McKeon, J. C. Moor, E. W. Peet, A. H. Penman, A. de W. Ranken, L. R. Routledge, Cathleen Rowstron, Edward Smith, and H. K. Vernon.

B.Hy. and D.P.H.—Bertram Sergeant.

L.D.S.—J. A. Atkinson and A. D. Hitchin.

University of Liverpool.

The following awards have been made:—Lady Jones Research Fellowship in Orthopædic Surgery: E. N. Wardle, M.B. John Rankin Fellowship in Anatomy: G. W. Causey, M.B. Johnston Colonial Fellowship in Biochemistry: R. W. Brookfield, M.D. John W. Garrett International Fellowship in Bacteriology: Honora J. Twomey, M.B. Holt Fellowship in Pathology: D. H. Collins, M.B. Holt Fellowship in Physiology: C. L. G. Pratt, M.D. Thelwall Thomas Fellowship in Surgical Pathology: R. A. Furniss, M.B. Robert Gee Fellowship in Human Anatomy: T. E. Lennon, M.B. Samuels Memorial Scholarship (Medicine): C. A. Birch, M.D. Samuels Memorial Scholarship (Surgery): M. Silverstone, M.B. Dr. N. E. Roberts Prize (Zymotic Diseases): S. Alstead, M.D. Owen T. Williams Prize: T. L. Hughes, M.B.

University of Leeds.

Mr. William Gough, F.R.C.S., has been elected professor of gynæcology, and Mr. Andrew Moynihan Claye, F.R.C.S., professor of obstetrics in the university.

Course on Circulatory Disorders.

A Post-graduate Course on Diseases of the Heart and Vessels will be held at the Hôpital Broussais, 96, rue Didot, Paris, XIVe, from Oct. 5th to 17th, under the direction of Dr. C. Laubry. Particulars may be had from Dr. Matton at the hospital.

Princess Beatrice Hospital.

The Kensington, Fulham, and Chelsea General Hospital has been renamed the Princess Beatrice Hospital.

St. Bartholomew's Hospital and College.

The old students' annual dinner is to be held on Thursday, Oct. 1st, in the Great Hall of the hospital at 7 for 7.30 P.M. Sir Percival Hartley will preside.

The late Dr. C. A. Porter.

Dr. Charles Allen Porter, emeritus professor of surgery at Harvard University, whose death is reported from Boston, will be remembered in this country as the surgeon in charge of the hospital unit which Harvard presented to Great Britain and sent over to France in 1915. He came of a distinguished family which has given medical practitioners to New England since 1625.

International Union against Tuberculosis.

The annual meeting of the council of this union, whose chairman is Prof. Frölich (Norway), was held in Paris on July 9th and was attended by delegates from 17 countries. It was decided that the next conference of the union should be held at the Hague from Sept. 6th to 9th, 1932, and that the three following subjects should be inscribed on the agenda: The Relationship between Allergy and Immunity; Gold-therapy; and After-care Schemes for the Tuberculous. The scientific session was held at the Pasteur Institute, in the new tuberculosis laboratories which the members of the council visited under the guidance of Prof. Calmette. The meeting was devoted to the report of Dr. Soper (United States) on A Standard Antituberculosis Plan; in Dr. Soper's absence his report was read by Prof. Opie. Prof. Valtis (Greece) explained the steps taken in regard to the antituberculosis campaign in his country. These reports were followed by a discussion in which Prof. Léon Bernard, Secretary-General of the Union, Prof. Knud Faber (Denmark), Colonel Rudzki (Poland), and others took part. On the same evening the members of the council dined at the Indo-Chinese pavilion in the Colonial Exhibition, where they were the guests of the French national committee for the campaign against tuberculosis. M. Blaisot, Minister of Public Health, gave an address of welcome.

Fellowship of Medicine and Post-Graduate Medical Association.

From August 4th until the end of the month a course in urology will be held at the All Saints' Hospital. It will include demonstrations and cystoscopies, and will occupy the afternoons and some evenings. The Queen's Hospital for Children is giving an all-day course from August 17th to 29th, instruction being entirely by demonstration of cases. During September courses will be given at the Brompton Hospital (from Sept. 7th for one week), the Bethlem Royal Hospital (Sept. 8th to Oct. 3rd), the Infants Hospital (Sept. 14th to 26th), the Central London Ophthalmic Hospital (Sept. 14th to Oct. 10th), the Westminster Hospital (Sept. 14th to 26th), and the Metropolitan General Hospital (Sept. 28th to Oct. 10th). Detailed syllabuses may be had from the Fellowship of Medicine, at 1, Wimpole-street, London, W. 1.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments have been made: Surg. Lts. R. A. Graff to *Vivid* for Plymouth Hospital; J. H. Nicolson to *Erebus*; and C. R. Boland to *Effingham*.

ROYAL NAVAL VOLUNTEER RESERVE.

Surg. Lts. E. E. Henderson and F. A. McLaughlin to be Surg. Lt.-Comdrs.

Proby. Surg. Lt. W. B. Wilson to be Surg. Lt.

ROYAL ARMY MEDICAL CORPS.

Maj. J. W. Houston retires on retd. pay on account of ill-health.

Maj. (prov.) G. E. MacAlevey from the secd. list, is restd. to the estabt.

Lt. E. H. Hall to be Capt. and remains secd.

Lt. P. V. MacGarry to be Capt.

The undermentioned Lts. (on prob.) from the secd. list are restd. to the estabt.: J. T. Robinson and J. M. Gibbon.

ARMY DENTAL CORPS.

Lt. R. W. Mather to be Capt.

TERRITORIAL ARMY.

F. R. Langmaid (late Offr. Cadet Serjt., Univ. of Lond. Contgt., Sen. Div., O.T.C.) to be Lt. with seniority.

John O'Donnell to be Lt.

INDIAN MEDICAL SERVICE.

Lt. (on prob.) D. C. Chopra to be Capt (prov.) (on prob.).

Lt.-Col. J. Anderson retires.

ROYAL AIR FORCE.

O. M. Fraser is granted a short service commission as a Flying Officer for three years on the Active List.

RESERVE OF AIR FORCE OFFICERS.

Flight Lt. T. M. Walker is employed with the Regular Air Force for a further year.

The *London Gazette* announces the appointment of Surg. Vice-Admiral R. St. G. S. Bond, C.B., as an Honorary Physician to The King as from July 1st.

Medical Diary

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.

MONDAY, July 27th, to SATURDAY, August 1st.—MILLER GENERAL HOSPITAL, Greenwich-road, S.E.10. Intensive course in general medicine and surgery. Second week. Daily 10.30 A.M., to 5.30 P.M., demonstrations, lectures, operations.—Further particulars from the Fellowship of Medicine.

WEST LONDON HOSPITAL POST-GRADUATE COLLEGE, Hammersmith, W.

MONDAY, July 27th.—10 A.M., Genito-Urinary Operations, Skin Department. 11 A.M., Surgical Ward Visit. 2 P.M., Surgical Ward Visit, Medical, Surgical, Eye, Gynæcological Out-patients.

TUESDAY.—9.30 A.M., Operations. 10 A.M., Medical Ward Visit, Dental Department. 11 A.M., Throat Operations.

11.30 A.M., Surgical Clinical Demonstrations. 2 P.M., Medical, Surgical, Throat, Out-patients, Operations, Medical Ward Visit.

WEDNESDAY.—10 A.M., Medical Ward Visit, Children's Medical Out-patients. 2 P.M., Medical, Surgical, and Eye Out-patients. Gynæcological Operations. 4.45 P.M., Venereal Diseases.

THURSDAY.—10 A.M., Neurological Department. 11.30 A.M., Treatment of Fractures. 2 P.M., Medical, Surgical, and Eye Out-patients. Genito-Urinary Department. Operations.

FRIDAY.—10 A.M., Medical Ward Visit, Skin and Dental Departments. 12 noon, Medical Lecture. 2 P.M., Medical, Surgical, and Throat Out-patients. Operations.

SATURDAY.—9 A.M., Throat Operations. 10 A.M., Medical Ward Visit, Surgical and Children's Medical Out-patients.

CHARING CROSS HOSPITAL MEDICAL SCHOOL POST-GRADUATE COURSE.

SUNDAY, July 26th.—10.45 A.M., Mr. C. Jennings Marshall: Hæmaturia: Its Significance and Investigation. 11.45 A.M., Dr. A. A. W. Petrie: Adolescent Psychoses.

ST. MARK'S HOSPITAL, City-road, E.C.

THURSDAY, July 30th.—4.30 P.M., Mr. W. B. Gabriel: Anal Fissure.

Appointments

FREEMAN, ERNEST A., M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Fracture Officer and Orthopædic Surgeon to the Royal Hospital, Wolverhampton.

MITCHELL, J. G., M.B., Ch.B., N.Z., Certifying Surgeon under the Factory and Workshop Acts for Hednesford, Stafford.

MONCRIEFF, ALAN, M.D. Lond., M.R.C.P. Lond., Honorary Physician for Diseases of Children to Bolingbroke Hospital, Wandsworth.

SIMPSON, A. S., M.B., B.S. Lond., Medical Officer of Health for Stalybridge.

STOTT, W., M.B., B.S. Durh., Medical Officer of Health for Southwark.

Vacancies

For further information refer to the advertisement columns.

Aberdeen Royal Infirmary.—Jun. Asst. Surgeon.
Accrington, Victoria Hospital.—H.S. £150.
Acton Hospital, W.—Jun. Res. M.O. £100.
All Saints' Hospital for Genito-Urinary Diseases, Finchley-road, N.W.—H.S. At rate of £150.
Altrincham General Hospital.—Sen. and Jun. H.S. At rate of £150 and £100 respectively.
Bangor, Carnarvonshire and Anglesey Infirmary.—H.S. £200.
Barnsley, Beckett Hospital and Dispensary.—H.P. £200.
Bath, Royal United Hospital.—Sen. H.S. At rate of £175.
Bedford County Hospital.—Asst. H.S. At rate of £130.
Benenden, Kent, National Sanatorium.—Res. Asst. M.O. £300.
Birmingham, Midland Hospital, Easy-row.—H.S. £150.
Bootle General Hospital, Nr. Liverpool.—H.P. At rate of £150.
Bradford Children's Hospital.—H.P. £120.
Bradford Royal Infirmary.—Three H.S.'s. Each £150.
Bury Infirmary, Lancs.—3rd H.S. At rate of £150.
Brighton, Royal Sussex County Hospital.—Cas. H.S. £120.
Brighton, Sussex Eye Hospital.—Hon. Clin. Asst.
Bristol, Stoke Park Colony.—M.O. £600.
Chester, East Lancashire Tuberculosis Colony, Barrowmore Hall, Great Barrow.—Asst. M.O. At rate of £275.
Chesterfield and North Derbyshire, Royal Hospital.—H.S. At rate of £150.
City of London Hospital for Diseases of the Heart and Lungs, Victoria Park, E.—H.P. At rate of £100. Also Registrar.
Coventry, Coventry and Warwickshire Hospital.—Res. Cas. O. £125.
Dudley, Guest Hospital.—H.S. and Asst. H.S. £200 and £170, respectively.
Durham County Hospital.—Two H.S.'s. Each £150.
East Ham, County Borough of.—Asst. M.O. £500.
Exeter, Royal Devon and Exeter Hospital.—H.P. and H.S. to Special Depts. Each at rate of £150.
Folkestone, Royal Victoria Hospital.—Locum Tenens Res. H.S.
Gravesend and North Kent Hospital.—Jun. H.S. £100–£150.
Great Yarmouth General Hospital.—H.S. £140.
Halifax, St. Luke's Hospital.—H.S. At rate of £250.
Hertford County Hospital.—H.P. At rate of £150.
Holland (Lincs.) County Council.—Asst. M.O.H. £500.
Hove, Lady Chichester Hospital.—Jun. H.P. At rate of £50.
Huddersfield Royal Infirmary.—H.S. At rate of £150.
Hull Royal Infirmary.—H.S. to Sutton Branch. £160.
***Ipswich, East Suffolk and Ipswich Hospital.*—Cas. O. £120.**
Kent Education Committee.—Temporary School Medical Inspector. 12 guineas per week.
King Edward Memorial Hospital, Ealing.—Res. M.O. £150.
Leeds Hospital for Women.—H.S. At rate of £100.
Liverpool Eye and Ear Infirmary, Myrtle-street.—H.S. to Ophth. Dept. £120.
Liverpool, Royal Children's Hospital.—Two Reg. H.S.'s. Each at rate of £500.
Liverpool, Smithdown-road Hospital.—Med. Supt. £1000. Also Deputy Med. Supt. £500.
London University, S.W.—University Readership in Pathology. £800.
Lurgan Union, Northern Ireland.—M.O. £300.
Macclesfield, Cheshire County Mental Hospital, Parkside.—Asst. M.O. £350.
Manchester, Ancoats Hospital.—Res. M.O., £150. Also H.P., H.S., and Orthopædic H.S. All at rate of £100.
Manchester Babies Hospital.—Jun. Res. M.O. At rate of £50.
Manchester, Manchester and Salford Hospital for Skin Diseases.—H.S. At rate of £100.
Manchester, Northern Hospital for Women and Children.—Sen. H.S. and Jun. H.S. £130 and £100 respectively.
Manchester Royal Eye Hospital.—Jun. H.S. £120.
Manchester Victoria Memorial Jewish Hospital, Cheetham.—Jun. H.S. At rate of £125.
Margate Royal Sea Bathing Hospital for Surgical Tuberculosis.—H.S. At rate of £200.
Marseilles, Queen Alexandra Memorial Hospital.—Res. M.O. £250.
Middlesex Hospital, W.—Sen. and Jun. Res. Asst. Anæsthetist. At rate of £120 and £80 respectively.
Newcastle-upon-Tyne, Newcastle General Hospital.—Two H.P.'s and three H.S.'s. All at rate of £150.
Northwood, Mount Vernon Hospital.—H.S. At rate of £150.
Plymouth Mental Hospital, Blackadon.—Deputy Med. Supt. £500.
Poole, Dorset, Cornelia and East Dorset Hospital—H.S. At rate of £150.
Queen Mary's Hospital for the East End, E.—Hon. Ophth. Surg.
Pontefract General Infirmary.—R.M.O. £200–£300.
Reading, Royal Berkshire Hospital.—Res. Anæsthetist. At rate of £150.
Rotherham Hospital.—Cas. H.S. £150. Also H.P. £180.
St. Leonards-on-Sea, Buchanan Hospital.—Jun. H.S. £125.
Salisbury General Infirmary.—H.P. £150.
Sheffield, Children's Hospital.—Whole-time Med. Registrar-Pathologist. £350.
Sheffield, Jessop Hospital for Women.—Asst. H.S. At rate of £100.
Sheffield Royal Hospital.—Cas. O. and Res. Anæsthetist. At rate of £150 and £80, respectively. Also Ophth. H.S. £120.
Sheffield Royal Infirmary.—H.S. and Second Asst. Cas. O. Also Ophth. H.S. Each at rate of £80.
Staffordshire, Longton Hospital.—H.S. £120.
Swindon and North Wilts Victoria Hospital.—Res. M.O. At rate of £125.
Walsall General Hospital.—H.P. At rate of £150.
Walsall Manor Hospital.—Asst. M.O. £150.
Warrington Infirmary and Dispensary.—Jun. H.S. £175.
Wolverhampton, New Cross Hospital.—Asst. Res. M.O. £200.
Worcester General Infirmary.—Jun. H.S. £120.

The Chief Inspector of Factories announces vacancies for Certifying Factory Surgeons at Egremont (Cumberland); and at Hillsborough (Sheffield).

Births, Marriages, and Deaths

BIRTHS.

DAVIES—On July 18th, at 27, Welbeck-street, the wife of Dr. Daniel T. Davies, of a son.

MARRIAGES.

BATT—ROBERTS.—On July 14th, at the Parish Church, Cadoxton, Barry, Dr. John Child Batt, to Mona Edwards Roberts, of Cadoxton, Barry.

ECKHOFF—ALLISON.—On July 17th, at Christ Church, Lancaster-gate, Nils Lovold Eckhoff, M.S., F.R.C.S., to Audrey May, daughter of the late Mr. T. J. Allison, of Pietermaritzburg, Natal.

DUNCAN—BUNTING.—On July 18th, at St. John's, Stanmore, F. W. Kenneth Duncan, L.D.S. Eng., to Florence Lillian, only daughter of Mrs. Bunting and the late Walter Sampson Bunting, of Westgate-on-Sea.

HEATH—FEATHER.—On July 14th, at St. Mary's Church, Weaverham, Cheshire, William Edwin Heath, M.B., B.S., to Winifred Maude Feather, M.B., Ch.B.

PRESTON—KING.—On July 21st, at All Saints', Upper Norwood, Thomas Warwick Preston, M.D., M.R.C.P., to Margaret Mary King.

YOUNG—BALL.—On July 18th, 1931, at St. James', Norlands, Dr. George Campbell Young, younger son of the late Mr. John Young and Mrs. Young, of Wimbledon, to Minnie Marjorie, youngest daughter of Mr. and Mrs. Ball, of Chesterfield.

DEATHS.

GRAY.—On July 15th, at Loughor, suddenly, Allan Edward Lambton Gray, M.B., C.M. Edin. of Abbotsea, Leamington Spa, aged 66 years.

ROSE.—On July 18th, at a nursing home in Barnet, Captain Percy Rose, L.R.C.P., D.P.H., late R.A.M.C.

TATE.—On July 18th, at The White House, Louth, Lincolnshire, after brief illness, Lieut.-Colonel R. G. H. Tate, R.A.M.C., retired, aged 52.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages and Deaths.

NOTES, COMMENTS, AND ABSTRACTS

MENTAL INEFFICIENCY AND ADOLESCENT CRIME.

By W. NORWOOD EAST, M.D., M.R.C.P. LOND.,
ONE OF H.M. COMMISSIONERS OF PRISONS.

(*Concluded from p. 169.*)

The Psychopathic Type.

THE constitutional psychic inferiors usually present in prison reactions markedly different from those of the group of psychopathic personalities with whom they are classified by some observers. Healy,[11] following Adolf Meyer, adopts the term "constitutional inferior" rather than "psychopathic inferior," and places cases of constitutional psychic inferiority between feeble-mindedness and insanity. I have already stated that this condition appears to me to lie between mental deficiency and normality; and cases of psychopathic personality, as we see them in prison, seem to me to occupy a position between unsoundness of mind and normality. I suggest, in other words, that the qualities of the constitutional psychic inferior which affect criminal conduct are negative, and those of the psychopathic personality are positive.

Ziehen [12] includes in his definition of psychopathic personalities a very wide range of cases, embracing, as May points out, not only hysteria and neurasthenia but epilepsy. Clouston [13] recognised the group, and included therein the crank, the markedly eccentric, and the anarchist; the man who easily falls into criminal ways; the miser, the chronic drunkard, the asocial and the ne'er-do-well; and the man of morbid wayward impulses possessing much originality and much force of character. Kraepelin [14] divides the group into several classes: the excitable, the unstable, the impulsive, the eccentric, the asocial, and others.

The American Psychiatric Association Committee describes psychopathic personalities as a large group of pathological personalities whose abnormality is expressed mainly in the character and intensity of their emotional and volitional reactions. It specifically excludes feeble-minded individuals, and calls attention to the fact that the constitutional psychoses arise on a basis of psychopathic inferiority or constitution, because the previous mental make-up in these conditions shows more or less clearly abnormalities in the emotional and volitional spheres. There remain, however, other less well-differentiated types of psychopathic personalities, and in these the psychotic reactions differ from those in the preceding groups. It is these less well-differentiated types of emotional and volitional deviation which are to be designated, at least for statistical purposes, as psychopathic personalities. The type of behaviour disorder, the social reactions, and the trends of interest, which psychopathic personalities may show give special features to many cases—e.g., criminal traits, moral deficiency, tramp life, sexual perversions, and various temperamental peculiarities. The Committee further point out that the mental disturbances or psychoses which develop in psychopathic personalities are varied in their clinical form, and are usually sporadic in character. Most frequent are attacks of irritability, excitement, depression, paranoid episodes, and transient confused states, and the Committee place the prison psychoses in this group.

Dr. August Wimmer,[15] in a personal letter, describes the group as follows:—

"A psychopath or constitutionally psychopathic person is an individual, the social maladjustment or antisocial or criminal trends of whom are due not to real defects of intelligence (as in feeble-mindedness), but to an anomalous mode of emotional and instinctive reaction and to behaviour troubles resulting therefrom. His psychic anomalies are habitual, very often manifesting themselves from early childhood, and mostly due to hereditary influences. His abnormal psychic outfit is rather constant during his lifetime, even if showing some fluctuation in connection with, for instance, menstruation, puberty, climacterium, and it is only to a certain degree influenced by environmental conditions—e.g., social, educational, and prison life. Along with the psychic troubles are often found other biological or nervous disturbances, manifesting the organic substratum of the psychopathy—e.g., developmental irregularities, retardation of physiological ripening, troubles of sleep, and convulsive conditions, more or less hysteriform or revealing the aspect of affect epilepsy or the like. Very often the psychopaths will more episodically, or in a more phasic way, manifest isolated or more psychotic symptoms as syndromes—psychogenic psychosis."

Prof. Wimmer adds that he considers a long definition necessary to avoid confusing the cases with mild stages of real mental disease.

The psychopathic personality may be associated with grave crimes or petty offences, and mental abnormality may be suggested by the circumstances of the antisocial act. These offenders are often characterised in prison by forceful, hostile, stubborn, violent, and reckless conduct; and they sometimes exhibit transient phases of excitement or depression. We see them often irritable, quarrelsome, impulsive, suspicious, untruthful, vain, and conceited; they may be impervious to argument and difficult of approach. Their reactions are persistently opposed, and in some particular direction, to the organisation of their environment; they may repeat the same crime in an attempt to impose their will on others, and their conduct is frequently detrimental to their own welfare. They sometimes swallow foreign bodies and refuse food, they make frivolous complaints, and exaggerate subjective sensations. Their outlook is selfish and narrow, they lack insight into their condition, and their judgment is biased. But they are shrewd, cunning, alert, energetic, and capable, and their memory, attention, perception, and capacity for sustained effort may be good. This type of offender is frequently under observation in prison, and may develop mild persecutory ideas or insane delusions. It is characteristic of the condition that the delusions tend to disappear when the individual is at liberty, and to reappear after reconviction.

The diagnosis of this cause of mental inefficiency may be conjectural in adolescent offenders, but the passing years display the symptoms of the fully declared condition.

A lad, 19 years of age, was convicted of warehouse-breaking in association with a man some years older than himself. His history showed that he was sent to live with his grandmother when two years old, and was accompanied by two elder brothers. At the age of 14 he unwillingly returned to his parents, and twice stole from his father the exact railway fare back to his grandmother. He was detained for four years in a reformatory, where he was happy and conducted himself well. On discharge he returned home and obtained several occupations which he soon left, and he was thought to be lazy. He was not solitary; he played cricket, football, and billiards, and owned a motor cycle. His home was a good one, but his parents frequently quarrelled. On examination I found him alert, independent, and rather brusque in manner. He was of fair average intelligence and his memory, attention, and perception were good. He professed great affection for his grandmother, and less for his mother. He was definitely hostile to his father; he considered that it was wrong to send him from home when so young, and also wrong to send him to his parents after he left school. He believed his father was prejudiced against him, as he reported the thefts to the police, and would not let him remain out late at night, although his brother, aged 25, was allowed to do so. He was affronted because his father allowed his sister to read harmless books, but tore up the detective stories he brought home. His outlook on life was somewhat defiant; he was obstinate, jealous, and suspicious, and entertained ideas of persecution. His initiative and energy were directed towards crime as a result of his social maladjustment. The inability to deal with his emotional

conflicts in a satisfactory manner, and the resulting paranoidal reactions, suggested a constitutional psychopathic make-up. It remains with the future to declare whether the efforts to divert him from crime will meet with success, or whether he will continue prejudiced and inefficient, a slave to the tyranny of his organisation.

The Psychoses.

The authorities quoted and actual prison experience show that manic-depressive disorder may arise in psychopathic personalities as well as in individuals who, after the normal emotional level has been regained, present no mental peculiarity other than the tendency to recurrence of the cyclothymic reaction. In criminal cases, as elsewhere, it is important to distinguish between the two types of case, for the psychopathic personality remains at a constant disadvantage and may commit further offences as a result, although rid of the manic-depressive episode.

In adolescents the milder phases of mental excitement or depression, seen so frequently in delinquents, may suggest adolescent instability rather than cyclothymic disorder. But, broadly speaking, the emotional phase in the latter is one either of exaltation or depression, and is more or less continuous for the time being, and the resulting conduct is compatible with the current emotional state. In adolescent instability the emotional reactions are mixed, and are unaccompanied by the continuous press of activity of the hypomanic patient or the continuous diminution of psychomotor response of the hypomelancholic. And although, in the early stages of mania, emotional hyper-excitability is liable to rapid and successive changes, the accumulation of symptoms as the disorder proceeds soon demonstrates its severity and distinguishes it from the less intensive condition of adolescent instability. The mildest degrees of mental exaltation and depression are not infrequent causes of temporary mental inefficiency in adolescents, and may be worsened if corrective efforts are misdirected or misapplied. If the slight cyclothymic deviations from ordinary conduct are recognised and appraised, the criminal adolescent can be assisted to regain his normal mental level and efficiency.

In the severe forms of schizoid reaction the cause of the mental inefficiency is so obvious that it is unnecessary for us to consider the cases at length. But we see in certain criminal adolescents inefficiency arising from mental symptoms, minor in degree, but of the præcox type. The subjects show slight loss of interest in their environment, they may be idle at work and disinclined for games, they may have an ill-defined sense of inferiority, be somewhat unsociable and preoccupied, and appear incapable of sustained effort. Some are inclined to be suspicious, hesitating, and hostile to authority and control. In others, slight vagaries of thought, feeling, and action may present themselves from time to time; trivial happenings may excite disproportionate reactions and whimsical conduct result from passing fancies. But the individual symptoms are only slight exaggerations of those usually associated with adolescence, and only call for a legitimate extension of the latitude and toleration usually permitted to youth. They indicate collectively only a slight departure from a state of adequate adjustment.

Some of these cases can be observed to progress, and present later the clinical features of dementia præcox. Some remain unchanged, although under observation for prolonged periods. The symptoms may resemble, for a time, those seen in certain cases of high-grade feeble-mindedness, particularly defectives who are developing the præcox syndrome. But not a few re-establish their social contacts and regain and apparently maintain their mental health, and it seems proper to regard them as examples of the minor and recoverable grades of dementia præcox to which Mapother,[16] Henderson and Gillespie,[17] Devine,[18] and others have directed attention. Recovery may be aided by patient, prudent, and sympathetic encouragement, by obtaining the subject's coöperation to readjust his difficulties, and by attention to his general health. It is important also to remember that Beaton,[19] in discussing the treatment of early cases of dementia præcox, warns us that "it is unwise in these acute adolescent disturbances to permit of any systematic psychological investigation; analysis in the Freudian sense has, in the experience of most psychiatrists, been productive of more harm than good, and it is certainly unnecessary."

Hysteria and Anxiety.

The symptoms usually presented by the hysteric delinquent before trial are mutisms, fugues, amnesias, and fits. But sometimes the psychic inefficiency is shown by emotional explosions, or the imitation of some striking anti-social act which has received undue publicity. These morbid mental phenomena permit the individual to assert himself, and arouse the interest and compassion of his audience. They are obtruded and outlined in a manner the hysteric believes to be accurate and recognisable; and, although they become exaggerated in a sympathetic environment, there is no conscious attempt to deceive and no conscious motive for the symptoms. They are the solution of his mental conflict, and express his incompetency to deal with unfavourable circumstances.

After trial the hysterical exhibitions of convicted prisoners are perhaps more frequently physical than mental. Occasional examples of the latter are seen in delinquent girls who shut themselves in their rooms and set them on fire, or insert needles in their breasts and limbs. We meet them again in male offenders, youths, and occasionally men, who swallow foreign bodies. In many of these cases we can trace mental conflict, and the suggestibility of the offender is shown by the frequency with which he copies the misdirected efforts of an associate. Further, the calm mental attitude described by Janet in cases of hysteria is often present; and although the subjects are clearly anxious to assert themselves, and desire to arouse interest and invoke sympathy, they reject the probable consequences of their self-inflicted injuries. Evidence of the hysterical nature of the symptoms receives additional support from the fact that they pass off when the environment is changed. I have already called attention to the fact that many offenders who swallow foreign bodies are psychopathic personalities. Vanity prompts others to attempt to secure the admiration of their fellows by these means. Some who require repeated abdominal sections to remove a succession of foreign bodies are reckless criminals, prepared to go to any length to cheat justice and gain their ends. It is not so long ago that their prototypes placed their limbs under railway trucks to avoid work, or shattered a finger to escape oakum-picking.[20]

Mild anxiety states may be the cause of abnormal fatigability of obscure origin in adolescent offenders. The natural disinclination of youths to admit fear, and their inability to appreciate the limitations imposed by anxiety, often make it particularly difficult to elucidate the symptoms associated with their social inefficiency. The prison physician must go out to meet the patient, who is unlikely to refer to his difficulties spontaneously. But seldom are cause and effect so clear as in the following case:—

A youth was convicted for breaking into a pavilion, and had been previously convicted for theft. He left one situation for no apparent reason, although he was earning 65*s.* a week at the time. He appeared to be depressed, reserved, diffident, and lacking in self-confidence. He wandered from home, slept out, and was the despair of his parents, who were unable to understand his eccentricities until he confided his troubles to them by letter, being too shy to speak openly about them. He was in good physical health, but it was clear that he had been anxious about his bodily condition for a long time, and thought that an imaginary bodily deformity and his habit of blushing made him conspicuous and ridiculous to strangers in the street. The mere thought of appearing in public produced a panic which was met by a phobia so overwhelming that he could only go out when it was dark, or during the day if enveloped in a large macintosh.

And, although he was able to attend a week-end camp by means of this expedient, he was unable to stir out of his tent. He described how he repeatedly went to his own front door to start to look for work, and was then overcome with panic and returned, although his mother sometimes went to the door with him to encourage him to greater efforts. He was a good worker, and believed that if he had obtained night-work he would have been able to retain it. But, as things were, he looked forward to detention in prison or a Borstal Institution as the best solution of his difficulties. He was of average intelligence and his memory was fair, but he was encumbered by a sense of his own inferiority, was easily fatigued and unable to concentrate, and his sleep was disturbed. His facial expression was anxious and depressed, and reflected clearly his emotional state. He had some insight into his condition. He underwent a course of psychotherapy and regained confidence in himself, and the anxiety and depression appeared to pass off. But when last heard of there was reason to suppose that the symptoms had returned.

The compulsion neuroses need be mentioned only to be dismissed. They are readily distinguished from the impulsive actions of defectives and from other causes of mental inefficiency if their paroxysmal characters and accompaniments of resistance and distress are called to mind. Some psycho-therapeutists admit that these cases are among the most intractable in the whole range of psychotherapy.

Fatigability.

There is perhaps no single condition so frequently associated with mental inefficiency and adolescent crime as a disinclination for work due to indolence and fatigability. Fatigability may be a symptom of mental deficiency, but in some juvenile offenders indolence appears to be an independent and innate constitutional disposition, probably comparable to the indolence of certain primitive races whose wants are few and easily satisfied. It is exhibited in others as a habit of mind which has been acquired as the result of precept, example, or circumstance. G. H. Miles [21] has pointed out how wrong-placement, inadequate training, and an unsympathetic supervisor may dull enthusiasm so that work and everything associated with it has, in time, so many accumulated associations of harshness, discomfort, and inadequate reward that it is shunned. Indolence results in the subject postponing the commencement of his task for as long as possible, and leaves him unexhausted when the work is completed. He expends a minimum of energy, and if the matter in hand is unfinished he is unconcerned, as he is unable to appreciate the satisfaction of accomplishment. Nevertheless, he often succeeds at play, for he may undertake this with enthusiasm and energy. He sleeps well and is not necessarily irritable, although he often displays temper when forced to work.

Mental fatigability, which I suggest is to be distinguished from indolence, may be associated with various conditions: with physical disease, endocrine imbalance, sexual and other excesses, mental deficiency and mental disorder, and psychological reactions to conscious difficulties or repressed conflicts. It is of recent development in the life of the patient and, although it may restrict his capacity for work, is not inconsistent with ambition. Moreover, failure causes disappointment, if the subject is concerned with results and covets fulfilment. Unlike the indolent adolescent, he tires at play as quickly as at work, for his energy is soon exhausted. Moreover, he often sleeps badly, and may be irritable generally.

William Brown,[22] writing in 1926, leads us to consider that reliable results have been obtained by skilful hands in the measurement of mental fatigue. But William McDougall,[23] writing in the same year, insists that the results of experimental studies of fatigue, up to date, are meagre, chiefly because the energy of the human organism is conditioned by the physiological state at the time of the experiment, and because the varying factors of incentives and motives are beyond control. C. S. Myers [24] has directed attention to the fact that the ergogram is favourably influenced by increased interest, pleasure, or other mental excitement. Laboratory tests, therefore, seem inadequate materially to assist the clinician to arrive at the ætiological factors which lower the threshold of fatigue. This is unfortunate, for the distinction between indolence and abnormal fatigability is important when dealing with adolescent delinquents. Here, as elsewhere, the detection of initial causes and their removal, when possible, is the first step in treatment. Then follows, for the indolent, incentive, example and reward; for the fatigued, suggestion, encouragement, and graduated progress; for both, the presentation, at the opportune moment, of the fact that purposive striving is a problem which must be faced before social efficiency can be attained. Probably no harder task is imposed upon the guardians of adolescent criminals than the conversion of firmly established indolence into efficiency if the subject is also slightly below the average in mental capacity, but above the level of mental deficiency. The following is an example:—

A youth, 17½ years old, was charged with vagrancy. He had been previously bound over for shopbreaking in company with another lad, and occasionally slept out. His father was dead, his mother was a respectable, hard-working charwoman. He was thought to be dull at school, but on leaving went as little-piecer in a mill and remained at the same employment for 15 months, in spite of the fact that the work was distasteful and the placement at fault. He did no regular work after this, except during four months in one situation, although permanent employment was offered him. The police did not consider his tendencies were criminal, although he was an idle frequenter of street corners. His general health was good, his height was 66 in., and his weight, 132 lb., was normal for his age and height. He was below the average in intelligence, and his mental age was 11 years. But he was fairly well-informed on matters of ordinary interest and common knowledge, although his performance tests, judgment of shapes, memory for designs, mechanical ability, and manual dexterity were probably below the average for his class. He lacked ambition and perseverance, and complacently confessed to being lazy. His aim in life seemed to be to get as much excitement out of it with as little effort as possible. But none of the experienced medical men through whose hands he passed found sufficient evidence to support a certificate of mental deficiency.

Adolescence is the age of surprises, and various factors combine to produce mental inefficiency and crime. I have endeavoured throughout to keep in close contact with clinical problems, and this is essential to the nature of our work. For our material is elusive: inferiority may be associated with crime or genius, the same conscious difficulties may produce opposite effects in different individuals, repression may be associated with criminal conduct, but without repression coöperative power is lost and society as we know it is impossible. Moreover, the problems are complex: psychiatry and psychology throw much light upon them, but other methods of approach are important also, notably the sociological, biological, anthropological, and eugenic. We must not confuse a part with the whole. Mental deficiency is an important factor in producing mental inefficiency, and we should resist any attempt to make it the dumping-ground for all adolescent non-effectives. It is for us to recognise slight deviations from normal conduct and endeavour to set them right. To do this we must ascertain as far as possible their origin and probable causes and effects. Some of our cases, like the unstable adolescents, may be guided safely through this difficult period. Some, like certain psychopathic personalities, may remain irresponsive. Some, like the mild cyclothymes, may reach the phase of normal conduct unassisted. All provide material for study and research. In our dealings with adolescent criminals, as well as in our own affairs, we must remember McDougall's admonition: "The really difficult thing in life is to have the stoicism that comes with realisation of the vanity of human wishes, and to combine it with energetic purposes and keen zest in the striving to accomplish them; to look at yourself and your affairs in a large and humorous way, and yet be urged on to constant effort by the divine discontent; to be at once stoic, epicurean, and

keen worker. Yet, unless you can be all these together, you will not have made the most of life."[25]

REFERENCES.

11. Healy, W.: The Individual Delinquent, London, 1915, p. 576.
12. Psychiatrie, 1911. Th. Ziehen, quoted by May. Mental Diseases, Boston, 1922, p. 505.
13. Clouston, T. S.: Unsoundness of Mind, London, 1911, p. 24.
14. Kraepelin, E.: Psychiatrie, 1915, iv., quoted by May, op. cit., p. 511 (see ref. 12).
15. Wimmer, A.: Personal communication.
16. Mapother, E.: THE LANCET, Extra Nimber on Early Mental Disease, 1926, London, p. 73.
17. Henderson, D. K., and Gillespie, R. D.: A Text-book of Psychiatry, London, 1927, p. 218.
18. Devine, H.: Recent Advances in Psychiatry, London, 1929, p. 210.
19. Beaton, T.: THE LANCET, Modern Technique in Treatment, 1926, ii., 225.
20. Quinton, R. F.: Crime and Criminials, 1876–1910, London, 1910, p. 13.
21. Miles, G. H.: The Will to Work, London, 1929, p. 17.
22. Brown, W.: Mind and Personality, London, 1926, p. 109.
23. McDougall, W.: Outlines of Abnormal Psychology, London, 1926, p. 58.
24. Myers, C. S.: An Introduction to Experimental Psychology, Cambridge, 1914, p. 107.
25. McDougall, W.: Character and the Conduct of Life, London, 1928, p. 213.

MEDICAL EDUCATION IN THE SUDAN.

THE Kitchener School of Medicine, Khartoum, has just issued its third report, covering work done in the years 1928–1930. It was founded in 1924 with the object of building up a cadre of Sudanese doctors to combat the epidemic and endemic disease of their country, to bring medical assistance within reach of all the inhabitants, and ultimately to replace medical men imported from abroad. The course takes four years, followed by a year at one of the larger hospitals in a house appointment; the abbreviation is secured by compressing the teaching of anatomy and physiology into a single year and omitting from it everything not definitely essential to the subsequent instruction. The school works on a small scale, and individual attention can be given that almost amounts to personal tuition. The yearly output aimed at is six qualified men, and the first-year class is maintained at ten students, carefully selected from the Gordon College. Seven doctors graduated in 1928 and seven more in 1929; all of these are now medical officers, and six are in sole charge of small hospitals, performing entirely satisfactory work. Five more have graduated this year, and are still on probation in house appointments. The success of these pioneers has made a great impression on students at the Gordon College, and there should now be no difficulty in getting recruits from the best type. The establishment of chemistry and biology classes at the Gordon College has enabled a more thorough grounding in these subjects to be given during the first year, and close liaison between the two bodies has been established in many directions. The new medical research laboratories, established opposite the school in 1928, have facilitated the teaching of pathology and now work in close coöperation with the school and the Civil Hospital. The experiment is interesting, for the students belong to a primitive people which little more than a generation ago was sunk in barbarism and misery. They are, however, virile, teachable, and capable of great enthusiasm and devotion. A country is more influenced by its medical profession than perhaps by any other movement, and the school ought to play an important part in the development of the Sudan.

TOBACCO TOLERANCE IN FISH.

Léon Binet and C. Zamfir record[1] experiments made on fresh-water fish in order to determine whether tolerance to tobacco and nicotine could be established. The tobacco was administered in the form of a maceration fluid made by soaking 2 g. of Maryland tobacco in a litre of river water for 24 hours, stirring occasionally, and finally filtering. The experiments were carried out in vessels containing 600 c.cm. of river water to which the fluid had been added in varying proportions. Three goldfish were prepared by exposure to water to which was added maceration fluid in gradually increasing strength, from 7·5 per cent. to 22·5 per cent. in 51 days. The fish were alternately exposed for 24 hours and rested for 24 hours in a large tank of running water. After this preparation they survived exposure to concentrations which killed unprepared fish in an hour, and after 66 days' preparation they even survived exposure to undiluted maceration fluid for three-quarters of an hour. Similar results were obtained with solutions of nicotine up to 0·003 c.cm. of the pure alkaloid in a litre of water. As, however, no investigation was made into the possible after-effects of the experience, smokers should not be too ready to draw the conclusion that tobacco in any quantity is harmless once a tolerance is established.

[1] Bull. et mém. Soc. méd. hôp. de Paris, June 22nd, p 1106

A PATIENT'S VIEWS ON TUBERCULOSIS.

A BOOK[1] written by a layman who has himself had tuberculosis, and feels that much of his suffering might have been spared if he had been dealt with frankly by his doctors in the earlier stages, is worth attention. The writer is an American, and the book is essentially American in its outlook. The author evidently had an unfortunate beginning to his experience as a phthisical patient. In the introduction, he says that, although he consulted and was examined by a number of physicians, none of them ever seemed to appreciate the sinister nature of the disease, and none of them ever gave him a particle of helpful advice. He has, therefore, set out to produce a book "by a layman, for laymen, and with the layman's point of view," in the hope that it may bring about a better understanding of the disease and its problems in the mind of the patient.

The book is a good comprehensive survey of the tuberculosis problem from the patient's standpoint. It is written in a crisp, arresting style, and contains much good advice. The medical profession comes in for a good deal of candid criticism—for example: "Much harm is constantly being done by indiscriminate and ill-advised surgery, or surgery that is undertaken too soon. There is a time to operate and a time not to operate, and it requires experience with the disease to make the proper decision."

The author writes feelingly about so-called cures: "The disease lends itself well to every kind of 'cure' and remedy under the sun, providing there is plenty of rest mixed up with it. After one becomes tubercular, it seems that half of the people one meets know of a certain remedy or form of treatment that they claim 'cured' some relative of theirs or someone they knew."

On the question of sunlight, real or artificial, the author expresses the sound view that it should never be used except upon the advice and under the supervision of experienced physicians and technicians. He has good advice to give to his fellow-countrymen on the choice of places to live in, such as Colorado, California, and the Pacific Northwest. The final chapter contains some helpful remarks to ex-patients on occupation, especially to those who have been compelled by their disease to change their job.

[1] Tuberculosis: its Cause, Prevention, and Care. By Frank H. Livingston. New York: The Macmillan Company. 1930. Pp. 191. 10*s*. 6*d*.

STANMORE OBELISK.—The Royal National Orthopædic Hospital's branch at Stanmore, Middlesex, stands upon part of the ground where in 54 B.C. the most powerful British tribe, the Catuvellauni, under Cassivellaunus, checked the Roman advance on St. Albans. About the year 1760 a local resident erected an obelisk to commemorate the victory and placed Latin inscriptions upon it. The obelisk, which had fallen into bad condition, has just been restored by the committee of the hospital and the inscriptions replaced.